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POVERTY REDUCTION BY INCREASING
THE COMPETITIVENESS OF ENTERPRISES



BANGLADESH POVERTY REDUCTION BY INCREASING THE COMPETITIVENESS OF ENTERPRISES (PRICE)

ANNUAL REPORT OCTOBER 2009 - SEPTEMBER 2010

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ACRONYMS

AAS	Agriculture Advisory Society
BARI	Bangladesh Agriculture Research Institute
BCLET	Bangladesh College of Leather and Engineering Technology
BDT	Bangladeshi taka (currency)
BFFEA	Bangladesh Frozen Food Exporter Association
BFRI	Bangladesh Fisheries Research Institute
BLSC	Bangladesh Leather Service Center
BPC	Business Promotion Council
BRC	British Retail Consortium
BSFB	Brinjal shoot and fruit borer
BSFF	Bangladesh Shrimp and Fish Foundation
CST	Closed system pond technology
DAE	Department of Agricultural Extension
DOF	Department of Fisheries
DOL	Department of Labor (United States)
EPB	Export Promotion Bureau
FY	Fiscal year
GHERS	Greater Harvest and Economic Return from Shrimp project
GOB	Government of Bangladesh
HACCP	Hazard Analysis and Critical Control Points
IPM	Integrated pest management
ITC	International Trade Center (Geneva)
ISO	International Organization for Standardization
LFMEAB	Leather Goods & Footwear Manufacturers & Exporters Association
LOI	Leaders of Influence (USAID program)
LSBPC	Leather Sector Business Promotion Council
LTSE	Leather Technologist SME Entrepreneurs
M&E	Monitoring and evaluation
MOC	Ministry of Commerce
MOFL	Ministry of Fisheries and Livestock
MOU	Memorandum of Understanding
MSME	Micro, small, and medium enterprises
MTT	Modified traditional technology
NAP	National Action Plan
NGO	Non-government organization
OW	Over-wintering
PCR	Polymerase chain reaction
PL	Post-larvae (shrimp)
SCA	Seed Certification Agency
SME	Small and medium enterprise
SSOP	Sanitary standard operating procedures
TBMP	Traditional best management practices
TOT	Training of trainers
USTR	United States Trade Representative
WFC	WorldFish Center
WSSV	White Spot Syndrome Virus

EXECUTIVE SUMMARY

With more than 40 percent of the population in poverty and two million people seeking to join the workforce annually, increasing investment and productivity through economic growth strategies that generate jobs is one of Bangladesh's greatest challenges.

USAID's Poverty Reduction by Increasing the Competitiveness of Enterprises (PRICE) is a five-year project that works with the Government of Bangladesh (GoB) and the private sector to remove constraints that hinder the competitiveness of the horticulture, aquaculture, and leather products sectors. The project aims to enhance the global and domestic competitiveness of Bangladesh by promoting broad-based economic development throughout these sectors that leads especially to more jobs and higher incomes for priority target groups. Life of project targets (February 2008-February 2013) include \$200 million in sales, \$4 million in investment, and 40,000 new jobs.

During the fiscal year (FY) ending September 30, 2010, the project's sector activities gained momentum, as the value chain development strategies started to produce results and new partners across the three sectors sought technical assistance and market linkages from PRICE. The project team established strong relationships with counterparts in the Ministry of Commerce (MOC), the Ministry of Fisheries and Livestock (MOFL), the Department of Fisheries (DOF), and with the private sector, particularly in promoting improved and organized farming, workforce development, and linkages between small and medium enterprises (SMEs) and lead firms.

With guidance from USAID/Bangladesh and feedback from partners in the field, PRICE was able to prioritize interventions and allocate resources more effectively. A greater effectiveness and efficiency was achieved in the horticulture sector after a strategic decision was made to focus project resources on three high value crops (potato, eggplant and mango) in the Northwest and Southwest of the country. The team successfully controlled costs and has engaged a large number of skilled local consultants to carry out short-term technical assistance. The project expanded activities across the three sectors, leading to new jobs, increased investment, and increased capacities at all levels.

Sales of PRICE-assisted SMEs and farmers increased by \$39.3 million during the year, close to the \$40 million target. As a result of PRICE interventions, almost 9,600 new jobs were created, private sector investment grew by \$1.9 million, and over 2,200 farmers and SMEs gained access to finance. PRICE placed a great deal of emphasis on training, with more than 4,600 mostly horticulture and aquaculture farmers receiving assistance to improve their management practices, and over

PRICE PERFORMANCE FY 2010		
INDICATOR	TARGET	ACHIEVED
<i>Sales increased</i>	\$40 million	\$39.3 million
<i>New jobs created</i>	10,000	9,585
<i>Investment increased</i>	\$1 million	\$1.9 million
<i>Farmers/SMEs trained in technology</i>	4,000	23,056
<i>Farmers/SMEs trained in management</i>	2,000	4,613
<i>Farmers/SMEs got access to finance</i>	300	2,239
<i>Workforce development training</i>	3,700	3,137
<i>Processing plant staff trained on labor compliance</i>	340	364

23,000 receiving different types of technical training. Over 3,100 persons participated in workforce development programs during the year, most of them in the leather products sector.

Horticulture. Economic growth, rising incomes, and urbanization have led to growing domestic demand for fresh fruits, vegetables, and spices. Bangladesh increasingly has become a net importer of horticultural products. PRICE is working to improve domestic supply and realize export potential for three key crops: potato, eggplant, and mango. In FY2010, PRICE helped to create the Potato Seed Growers' Association in Rajshahi, and assisted members in improving their seed quality and achieving certification. The project also supported 91 potato seed contract farmers in Chuadanga and 50 farmers in Bogra to produce good-quality seeds. PRICE assisted one agro enterprise and a farmers association to undertake potato contract farming involving 1,830 farmers of Bogra, one of the major potato growing regions of the country, and provided technical assistance in following proper agronomic practices, use of better quality seeds, proper pest control measures, and adoption of better post harvest handling, which has contributed significantly to increased potato yields.

PRICE worked with 18 commercial eggplant farmers groups to train 540 farmers on production technology, safe pest management, and post-harvest handling, and facilitated the introduction of new varieties of eggplant, potentially allowing year-round production. In mango, the project collaborated with two partners to train nearly 300 farmers on modern production and management, including post-harvest technology. PRICE assisted in organizing a mango farmers association and helped establish market linkages for selling garden fresh chemical-free mango directly to the consumers. PRICE also helped the lone frozen vegetable exporting company of the country to obtain British Retail Consortium (BRC) certification and develop other quality standards that will provide it with enhanced access to international markets in the near future.

PRICE's activities have led to increased yields, safer integrated pest management practices, improved post-harvest storage, and greater use of eco-friendly inputs and techniques. As a result of interventions in the reporting period, horticulture sector partners increased sales by more than \$6.4 million; the project helped to create 2,656 jobs, and investments in fixed assets increased by approximately \$377,000. In addition, 4,857 farmers received assistance in improved technology and management, and 1,037 farmers received help accessing finance (see Annex 1).

Aquaculture. PRICE is working to strengthen the competitiveness of the fish and shrimp value chains, which are vital to meeting the country's food requirements and generating employment and export sales. While 98% of farmed shrimp is exported, almost all produced fish is locally consumed, and provides most of the animal protein in the Bangladeshi diet. In FY2010 the project team worked with diverse value chain actors, including hatcheries, seed traders, input sellers, farming associations, depots, dry fish yards and processing plants. Project activities led to additional sales of nearly \$26.2 million, the creation of over 5,800 jobs, and about \$1.1 million in new investments.

In the fish subsector, PRICE focused on improving farm productivity, promoting market linkages and access to finance, and facilitating compliance with good

aquaculture practices. Approximately 11,000 fish farmers were trained on improved farming technology, and 3,500 on improved management of their farms. Training on group procurement of inputs and group marketing of produced fish was provided to the farmers in order to reduce cost and increase sales, and links were established between farmers and processing plants. PRICE facilitated increased access to inbreed-free spawns and introduced farmers to new and more profitable species of fish. PRICE also assisted 400 fish yards in Cox's Bazaar with safe dry fish manufacturing.

Through collaboration with PRICE, partners in the fish subsector increased their sales by \$13.5 million and created 3,000 new jobs. In addition, farmers and their families benefited from increased yields, some of which they have been able to enjoy for their own consumption, leading to better nutrition and less spending on more expensive protein sources, such as meat. With PRICE support, nearly 1,200 micro and small-scale fish farmers obtained loans, with their associations acting as guarantors.

In the shrimp subsector, PRICE helped improve compliance with export markets, as well as improved farm productivity. Through its Greater Harvest and Economic Return from Shrimp (GHERS) initiative, subcontracted to World Fish Center, PRICE promoted improved farming practices and a market for virus-free, screened post-larvae. PRICE also worked directly with 17 depot owners in Bagerhat and Khulna to organize shrimp farmers under contract farming systems, and 8,000 farmers received training on improved farm management and production techniques.

PRICE helped the shrimp industry achieve compliance with Bangladesh Labor Law by facilitating training for 364 regular and management staff of 10 processing plants on labor rights and responsibilities. United States Trade Representative (USTR) and Department of Labor (DOL) officials visited some of the assisted plants to view progress made. Two additional processing plants conducted training on bio-security measures such as the Hazard Analysis and Critical Control Points (HACCP) and the Sanitary Standard Operating Procedure (SSOP). And, as part of its collaboration with the Government of Bangladesh's (GOB) National Action Plan (NAP) to combat antibiotic contamination in farmed prawn, PRICE successfully conducted an in-depth experiment to identify the probable sources of nitrofurans* contamination and sought ways to remove it.

In FY2010 shrimp subsector partners increased their sales by about \$12.6 million, invested more than \$830,000, and created around 2,800 jobs.

Bangladesh is known for its high quality leather. The country exports 80 percent of its leather products – in the form of semi-finished leather (75 percent), finished leather (20 percent), and footwear, handbags, accessories, and leather goods (five percent) – to 53 countries. The sector generates employment for 740,000 people and demand for labor grows as more foreign companies transfer production to Bangladesh. PRICE-led workforce development is filling a need for skilled workers, particularly women and younger people. An increase in skilled labor is leading to higher production, and increased sales and exports. In addition, small and medium leather enterprises have attracted more business due to skills training and linkages with large firms, and the project has helped the industry gain access to tests required to export their products.

* Nitrofurans are antibiotic drugs that were widely used in food animal production. Due to concerns about their carcinogenicity and mutagenicity, they have been banned in many countries.

During FY2010 PRICE partnered with four footwear companies to train more than 2,000 workers in cutting, prefabrication, sewing, and lasting/finishing operations. This led to the creation of more than 1,115 full time new jobs, of which 826 were for women.

Simultaneously, PRICE built up the capacity of SMEs and helped them form associations, develop market linkages, access finance, and upgrade their production processes. Due to this initiative, large enterprises such as Aarong, Jennys Shoes, and Gallerie Apex started doing business with several PRICE-supported SMEs as their subcontractors. PRICE organized a lender-borrower meet that has to date led to \$165,000 in loans from commercial banks for four SMEs. The Bangladesh Leather Service Center (BLSC) laboratory received capacity building assistance to conduct critical tests necessary to detect the level of formaldehyde and chrome VI in exported leather products.

PRICE also supported the leather products sector by organizing a flaying campaign to increase awareness and knowledge of flaying and preservation of hides/skins at source, thus leading to an improvement in the quality of leather available to the processors. In order to accomplish this, PRICE worked with other development partners in engaging religious leaders and associations to disseminate relevant information to concerned persons through various activities including road shows, cattle *haat* shows, leaflet distribution, and through electronic media such as FM radio. It is estimated that the awareness campaign reached more than 200,000 people.

Due to PRICE interventions in the reporting period, leather sector partners increased sales by more than \$6.8 million, created 1,115 new jobs (826 for women), and attracted additional investment of \$393,700.

SECTION I. HORTICULTURE

Overview

This fiscal year the PRICE team focused its efforts on three major horticultural crops: potato, eggplant, and mango, and conducted cross-cutting activities to promote contract farming, safe produce, and the use of compost and bio-fertilizer. PRICE also helped set up a plant clinic, and assisted its partners in the production and promotion of quality seeds. The project worked mainly in the northwest (Bogra), and the southwest (Jessore), particularly in strengthening crop value chains. In support of the entire horticulture sector, PRICE continued to promote the efficient production and increased use of compost to conserve soil fertility and enhance productivity. Through September 2010, as a result of PRICE interventions, horticulture sector partners have increased their sales by more than \$6.5 million (of which \$6.4m was achieved in FY2010); created 2,716 new jobs (of which 2,656 were created in FY2010), and increased investments in fixed assets by \$493,517. PRICE has provided training on improved technology and management training to 7,024 horticulture farmers, and has helped 1,037 farmers obtain access to finance.

Results in Horticulture till Sep 2010	
Sales increased	\$6.5 million
New jobs	2,716
Investment increased	\$494,000
Farmers trained in Technology	5,308
Farmers trained in Management	1,716
Farmers received micro credit	1,037

Potato. The project promoted the creation a Potato Seed Growers Association in Rajshahi, which is helping 884 member farmers to improve potato seed quality and to obtain certification through the Ministry of Agriculture’s Seed Certification Agency (SCA). The project also supported 91 potato seed contract farmers in Chuadanga and 50 farmers in Bogra to produce quality potato seeds. PRICE provided technical assistance to 1,730 table potato contract farmers, obtaining yields of around 10 metric tons per acre.

Eggplant. PRICE worked with 18 commercial eggplant farmer groups to train 540 farmers on production technology, safe pest management, and post-harvest handling. The project facilitated the introduction of new varieties of eggplant to some partners, which will allow year-round production, and supported 650 resource-poor farmers to follow integrated pest management (IPM) techniques focusing on biological control measures.

Mango. The project collaborated with Kansat Mango Farmers Multipurpose Cooperative Society Ltd. (KMFMCSSL) of Rajshahi and with ANKUR, an agro enterprise of Chaudanga district. Two hundred ninety mango farmers associated with KMFMCSSL and ANKUR were trained in modern production and protection management technology of mango, including post-harvest handling. PRICE supported KMFMCSSL to market garden fresh and chemical-free mango in Dhaka and Chuadanga.

A. Potato

PRICE signed a memorandum of understanding with Gram Unnyan Kendra Enterprise Development (GUKED) to develop a vegetable contract farming model with 1,500 farmers, and worked in Bogra with GUKED and Murail Rural Development Multipurpose Cooperative Society Ltd. (MRDMCSL) to increase productivity and income by promoting potato contract farming and by improving technical skills through training and demonstrations. PRICE facilitated the services of a potato expert for on-farm supervision, guidance during the growing season, and advice for efficient post-harvest handling operations.

Since July 2010, PRICE has worked with the largest potato seed producing association of Bangladesh, the Seed Potato Growers' Cooperative Society Limited in Rajshahi, to help produce disease-free potato seeds. Work continued with Konika Seed Company Ltd. of Chuadanga for production of good-quality certified potato seed. PRICE joined the Rural Development Academy (RDA) of Bogra to raise the quality of seed production in the region through interventions in the tissue culture lab and through training for technical personnel of different seed producing companies engaged in potato seed production. In addition, the project helped to launch a potato seed producers and sellers association in Bogra with eight members. It also helped the association link with RDA to access tissue-cultured plantlets and pre-breeder seeds, and provided technical support to ensure the associations obtained proper certification through the SCA.



Women farmers harvest potato in the field of Konika Seed Company at Chuadanga

A1. Supporting Potato Contract Farming through GUKED

Organized contract farming has not been a common practice in Bangladesh, but PRICE has been successful in promoting it with some of its agro partners. The project assisted the GUKED to establish a contract farming system involving 1,500 potato farmers so that they could receive seasonal crop-based credit and access to quality seeds, as well as technical assistance on contract farming. From November 2009 to mid-February 2010, GUKED farmers produced 7,400 MT of table potato and 630 MT of seed potato. Their yields increased from approximately 6.5 to 10.5 tons per acre. Activities led to the creation of 909 full-time jobs.



A potato contract farmer of GUKED is working in his farm

A2. Promoting Increased Potato Production through Skill and Knowledge Development

PRICE facilitated the training for 230 MRDMCSL farmers in potato production, post-harvest production, and storage; and provided supervisory technical assistance to

cooperative society members during the production season to avert disasters such as infestation of late-blight disease, which nearly destroyed their crops in 2009. PRICE also helped the association to source quality certified seeds. Production of table potato increased from 1.8 to 7.5 MT per acre. The association produced 701 MT of potato and activities led to 64 new full-time jobs.

A3. Demonstration on Modern Potato Crop Husbandry

PRICE supported the Konika Seed Company to establish three demonstration plots on modern production technology of seed potato in three villages of Chuadanga and



Vice President Chemonics and COP PRICE at the potato demo plot at Murail

Jhenaidha upazilas. Neighborhood potato farmers were invited to visit the demonstration plots and were encouraged to adopt modern technology that will allow them to increase total seed production by as much as 15 percent.

PRICE also assisted MRDMCSL in Bogra to establish demonstration plots in its main two production sites, Vagdugra and Bishnupur, to show the positive effects of appropriate agronomic practices on the production of table potato.

A4. Promoting Disease-Free Potato Seeds

RDA Bogra has a biotechnology division that works to produce disease-free potato seeds through tissue culture techniques. The laboratory produces plantlets, pre-breeders, and breeder and foundation seeds, but its limited capacity restricts efforts to reach potato seed growers. PRICE supported RDA in training seed potato farmers, seed growers, seed companies, and tissue culture laboratory technicians on different aspects of disease-free potato seed production. RDA allocated disease-free seed potato and tissue-cultured plantlets for PRICE partners to be delivered during the sowing season in November 2010. In turn, the project is providing technical assistance to the RDA's lab to strengthen its capacity.

In June 2010, the project team signed an MOU with the 884-member Potato Seed Growers Cooperative Society Limited of Rajshahi to improve their technical knowledge in potato seed production and post-harvest handling, mainly for tissue-culture plantlets and tuberlets. Through PRICE assistance, this originally small and informal group of potato seed producers has transformed into the largest government-registered seed potato association of the country. Most farmers of the association have received PRICE training in the production technology of tissue-culture seed.



Meeting of seed producers at the RDA

A5. Promoting a Potato Seed Growers Association in Bogra

The lack of standard technology or certification adversely affects the potato seed industry in Bogra. To address this problem, PRICE worked with the RDA to source quality seed and foster technical knowledge. With the encouragement of PRICE and RDA, eight Bogra potato seed

enterprises formed a Potato Seed Producers Association in February 2010 and are now collaborating among themselves and engaging in cross-training. PRICE and RDA are assisting association members to improve seed quality by providing technical support and training, and referring them to the potato tissue culture laboratory and to the SCA.

A6. Potato for Food Security

Increased potato production is not only generating rural jobs and income, but is also enriching the local diet and increasing food security. For example, project-supported farmers in Pallimagal and Shibganj, Bogra have expressed their pleasure with increased potato yields, particularly because they can now include more potato in their daily diet, mainly through *ghujini*, a potato-based *kichuri*. Another example is the 1,500 GUKED farmers, who consumed around 450 MT, or seven percent, of their potato production, while the MRDMCSL farmers consumed about 10 percent of their production.

B. Mango

Mango is the only cash crop for thousands of farm families of some northwestern and southwestern districts of Bangladesh, particularly Nwabganj and Meherpur districts. PRICE promoted the creation of the 251-member KMFMCSL of Chapainwabanj, and also started collaborating with the 500-member ANKUR, an agro-based enterprise of Chuadanga, to improve productivity and post-harvest handling, and to help farmers to grow chemical-free mangos and pursue market linkages.

B1. Increasing Productivity of High-Quality Mango and Improving Post-Harvest Handling

PRICE worked with KMFMCSL farmers to practice responsible post-harvest handling techniques, including hands-on training on simple post-harvest technologies such as sorting, grading, cleaning, washing, drying, packing, and transporting. As a result, farmers achieved 20 to 40 percent higher prices compared to the previous year.

Similarly, PRICE supported ANKUR to provide training to 60 mango farmers from the villages of Memnagar and Madna, in Chuadanga, for proper harvesting of mature mango, as well as for post-harvest handling and marketing. As a result, the village farmers have entered into an agreement to supply their mangos to ANKUR.

Increasing mango yield and price

KMFMCSL's members grow two early varieties of mango, *himsagar* and *langra*, and two late varieties, *fazli* and *ashwina*. PRICE organized field-based technical support during the production season, particularly on pest management, irrigation schedules, and moisture conservation techniques during the hot, dry spell when immature mangos start dropping due to moisture stress. This training helped farmers minimize fruit dropping and increased yield per acre. Training and technical assistance helped farmers obtain prices 20 to 40% higher than the previous year.

B2. Promoting a Market for Chemical-Free Mango

In recent years, at the wholesale and retail levels, there has been rampant use of carbide, a ripening agent that is harmful to human health. In May 2010, with the help of PRICE, KMFMCSL farmers opened the first of eight new carbide-free mango

stands in Dhaka. PRICE also assisted these farmers with inventory management and pricing. As a result, KMFMCSSL farmers sold two MT of mango daily during the peak season (May through August), directly to consumers. The total value of these sales was BDT 20.29 million, approximately \$298,000. Promotion of the chemical-free mangoes received extensive coverage in national print and electronic media.

Meanwhile, PRICE supported ANKUR in direct marketing, inventory management, transportation, and fresh mango storage. In June 2010, ANKUR opened two mango sales centers at Jibonnagar and Chuadanga. As a result of project assistance, ANKUR has developed the capacity to independently manage this process and has received better prices for its chemical-free fresh produce.

B3. Organizing Soil Testing for Sustainable Mango Production

In order to apply the proper dosage of agrochemicals it is important to know the quality of the soil where mango is cultivated.

Through the Soil Resources Development Institute of Rajshahi, PRICE helped KMFMCSSL mango farmers test their soil so they can apply fertilizer based on the soil nutrient status. Under the guidance of the project's technical supervisor, soil samples were collected and each farmer received a "soil report card," used to determine the fertilizer requirement of each orchard. This initiative helped the farmers to apply optimum doses of fertilizer, which conserves soil fertility and achieves sustainable production.

C. Eggplant

The project is working to introduce new varieties and control pest infestation through environmentally sustainable methods.

C1. Assisting Farmers to Sustainably Produce Eggplant

PRICE works with the *Vatercharchar Krishok Unnyan Bahumkhi Samabay Samity* in Norshingdi and the Agriculture Advisory Service (AAS) at Natore and Ishurdi to support 764 eggplant farmers to minimize the use of pesticide by adopting IPM and other safe and environmentally friendly measures that will also increase productivity. The project supported the training of 330 farmers of Natore and Pabna on production, post-harvest handling, and IPM, and provided technical support to 180 small eggplant farmers on managing phomopsis, a fungal disease affecting eggplant. It also helped farmers control the brinjal shoot and fruit borer (BSFB) insects and improve

PRICE Helps Bring Chemical-Free Mangoes to Dhaka

In the 2010 mango season, PRICE's technical assistance and market linkage support to KMFMCSSL farmers led to the launch of several mango stands in Dhaka, where consumers were able to buy chemical-free mangos. Using chemicals such as carbide to ripen immature mango deteriorates the quality of the fruit and is a threat to human health. PRICE facilitated training for the farmers and wholesalers on production, pest management, and post-harvest handling, and then further supported them by hiring consultants from the Mango Research Station of Chapainwabganj.



Md. Suman Ali, a member of the mango association, sold his mangos in Gulshan Society Park. Suman received training on how to harvest mature mangos and naturally ripen them. As one customer said, "The mangoes that we are buying in the city are mostly ripened with chemicals. These mangos have the original smell, whereas the ones ripened with chemical do not."

harvesting and post-harvest handling techniques. Farmers received fact sheets on major diseases and pest control measures.

As a result of PRICE's assistance, eggplant farmers increased their yield by 621 MT and saw sales rise to \$2.3 million. PRICE provided similar training and technical support to 680 farmers through the Environment-Friendly Agricultural Development Foundation Agro Business (EFADF) and Organix, two newly formed agro-enterprises in Khulna. Please see text box (right) to learn about their work with women's vegetable production groups.

Organizing Women's Vegetable Production Groups

PRICE supported its partners EFADF Agro Business and Organix to train 164 women contract farmers on safe vegetable cultivation techniques and also assisted them with technical supervision and access to better seeds and credit. About 80 percent of the women farmers were engaged full-time in their own field producing vegetables. They prepared their fields, sowed and transplanted seeds, used proper pest management techniques, and engaged in operations and harvesting. Two resource poor exclusively women farmers groups in Khulna were organized for commercial horticulture production and marketing. This assistance has not only empowered them but also given them skills to help earn an income.

C2. Safe Pest Management Demonstration

Through March 2010, on 8.5 acres in Natore, PRICE assisted AAS in organizing trained eggplant farmers to showcase safe pest management of the devastating BSFB insects. With the supervision of AAS, participant farmers used sex pheromones and a weekly release of two types of parasitoids throughout the winter growing season. PRICE linked the farmers with a local biotech company, who supplied farmers with biological agents and hormones. Farmers used no pesticides and saved BDT 20,000 (\$290) on average, around 40 percent of the total cost of cultivation. The company that supplied the pheromones and parasitoids helped to implement the program.

C3. Year-Round Production through Introduction of New Varieties

Bangladesh boasts a rich diversity of eggplant varieties, specific to each region.



AAS farmer harvesting high-yield white eggplant at Natore

PRICE has helped to introduce high-yielding varieties of eggplants to the EFADF Agro Business in Khulna and the Vatercharchar Krishok Unnyan Bahumkhi Samabay Samity in Norshingdi, through linking them with project partner leading and private seed company, the Lal Teer Seeds limited, and by introducing an off-season White Josori variety in the Natore area, through AAS. PRICE helped establish two field demonstrations with the White Josori variety in Natore to prepare farmers for early harvest in April-May, when the price was at a premium for the new varieties.

D. Cross-Cutting Activities in Horticulture

D1. Promoting the Use of Organic Compost and Bio-Fertilizer for Sustainable Long-Term Crops

At less than one percent, the organic matter content in Bangladesh's soils can not support long-term cropping. Most of the country's soil is under intensive cultivation and requires soil health management. PRICE worked with the Grameen Krishok Shohayok Sangstha Enterprise (GKSSE) of Bogra, and the Riya Fertilizer of Sirajganj to promote the use of organic compost and fertilizer. The project supported training



Vermi composting at the GKSSE

for 960 vegetables farmers of GKSSE on the benefit and application method of organic compost and fertilizer in three Bogra upazilas: Shibganj, Gabtoli, and Bogra Sadar. PRICE also facilitated training of 100 Sub-assistant Agriculture Officers of the Ministry of Agriculture's Department of Agriculture Extension (DAE) on soil health, as well as on the importance and application method of organic compost and fertilizers on horticulture crops such as eggplant, potato, pointed gourd, and tomato. Field days were organized in Shibganj, Gabtoli, and Shahjahanpur upazila of Bogra, where neighboring farmers, public representative, agriculture officials, dealers, and retailers attended and shared their experiences on the effect of organic compost and fertilizer on crop yield and soil health.

As a result, the GKSSE produced and sold 342 MT of vermi- and tricho-compost, a 700 percent increase from last year's production and sales.

In collaboration with the Bangladesh Agricultural Research Institute (BARI), an autonomous organization under the Ministry of Agriculture, the project continued to support GKSSE to improve the quality of tricho-compost and tricho-powder, a fungal-based bio-control agent, and helped the organization to establish a trichoderma laboratory to produce the fungus used for bio-degradation and pest control.

D2. Contract Farming for Safe, Eco-Friendly Vegetables

PRICE continued to facilitate contract farming initiatives of Organix at Khulna to produce and market safe and eco-friendly vegetables. The project assisted Organix to train 180 farmers (112 male and 68 female) and to set up three demo-plots for the demonstration of winter vegetable cultivation practices. PRICE's efforts in market linkages continued with the local retail vegetable shops and a wholesale market. PRICE helped Organix to expand their sales beyond Khulna, particularly in Mongla, where vegetables do not grow due to soil salinity. As a result, the farmers enjoyed healthy profits, and Organix sold more than one million kilograms of vegetables worth BDT 13 million (\$188,000), and creating 169 full-time equivalent jobs.

In collaboration with the EFADF, the project supported 500 small farmers in the south to produce and market summer vegetables, particularly eggplant, bitter melon, and cucumber. Farmers in this region cultivate rice and fish in the low-lying flooded lands

for family consumption and erect dykes to cultivate vegetables for sale. The EFADF began supplying organic fertilizers, seeds, and other inputs to farmers, but marketing the crops remained a serious challenge. PRICE supported 500 farmers (402 males, 98 females) in intensive, multi-storied vegetable cultivation in the narrow dykes using



EFADF farmers are growing safe vegetables in dykes

organic fertilizer and bio-pesticides, while adopting grafting techniques for the control of nematode (a micro-organism that looks like a round worm) in eggplant. PRICE also created linkages with Lal Teer Seeds Ltd. to enhance access to quality seeds for the associated farmers. As a result, EFADF directly sold 416,550 kilograms of vegetables worth BDT 5 million (\$72,000) and farmers sold more than one million kilograms of vegetables worth BDT 8.5 million (\$123,000).

D3. Promotional Event for Safe Vegetables in Khulna

In March 2010, PRICE helped Organix organize an event to discuss the promotion and marketing of vegetables produced through safe and eco-friendly agricultural practices. The mayor of Khulna, the director of the Department of the Environment, and the deputy director of the DAE launched the event, which drew more than 100 participants from government agencies, NGOs, financial institutes, media, agro-inputs suppliers, vegetable traders, and farmers. Through this initiative Organix extended its outreach and enhanced its sales of vegetables.

D4. Plant Clinic for Health Service Support

Proper diagnosis and management of plant diseases is vital for the cultivation of high-value horticultural crops. PRICE helped establish two temporary plant clinics in the Gurudashpur and Baraigram markets of Natore, where plant health specialists set up small booths to display images of disease symptoms for eggplant, onion, and garlic, and issued information on disease control so farmers could learn during market days. This activity created a lot of enthusiasm among the farmers coming to the market. Many farmers brought their diseased plant and fruit samples and received written prescriptions on the spot.



Farmers consulting experts at the plant clinic

D5. Support to the Industry for International Food Compliance

PRICE supported Golden Harvest Agro Industries, a frozen vegetables and snacks producing company, to follow BRC certification guidelines, including the HACCP for frozen foods. PRICE facilitated in-staff training of the company on BRC and HACCP and established linkages with a farmers association to obtain farm fresh vegetables.

PRICE also linked the company to the BARI laboratory to have its products tested for maximum residual level in certain export products.

D6. Supporting Production, Promotion, and Marketing of Good Quality Vegetable Seeds

In FY2010, PRICE supported the production and promotion of high-yield varieties of vegetable seeds through its partners Padma Seeds, Lal Teer Seeds Limited, and Konika Seed Company. Padma Seeds is a Chuadanga-based company that trained 150 contract farmers, through six group leaders, on production techniques and supplied certified summer and winter vegetables seeds as well as required inputs such as fertilizer, irrigation, and pesticides. PRICE has provided technical support to the seed farmers to produce gourds, red and stem amaranths, kangkong, spinach, and Indian spinach. As a result, the farmers have supplied the company with good quality seeds and the company sold 136,615 kilograms, totaling BDT 25 million (\$360,000). PRICE also helped Padma Seeds to improve its documentation and inventory management.

Konika Seed Company continues to work in the contract farming system for the production of vegetable and other seeds. This fiscal year, Konika produced 5,000 kilograms of seeds such as amaranth, water gourd, and pumpkin, of which more than 1,000 kilograms were sold through retail outlets.

Lal Teer Seeds has excellent marketing linkages, but their dealers lack knowledge of the products. To better educate them, PRICE supported 64 farmers' field day programs. Participating farmers received information regarding new varieties of seeds, cultivation techniques, pests, diseases, and benefit of using good seeds. The field days strengthened farmers' access to good quality seeds through creation of linkages with the seed retailers. On average, 250 farmers attended each field day.

D7. Access to International Markets through Gulfood Exhibition

Golden Harvest Agro Industries is the only frozen vegetables and frozen food exporting company of the country.

The company exports its products to several countries, including the U.S., targeting mostly ethnic markets. To help Golden Harvest expand its export destinations, PRICE encouraged and assisted the company to attend Dubai's Gulfood Exhibition in February 2010, one of the largest food and beverage exhibitions of the region. Golden Harvest Agro Industries is the first national company ever to participate in the Gulfood, and its participation has created the opportunity for Bangladeshi products to access



After attending GULFOOD, Golden Harvest executives and USAID/PRICE team gave a presentation to His Excellency, Ambassador of U.S. in Bangladesh

Middle Eastern markets and beyond. More than 80 buyers from different countries came to Golden Harvest Agro Industries' stand and, as a result, the company has begun exports to several Gulf Cooperation Council countries.

D8. Access to Finance

PRICE helped 1,037 horticulture farmers get loans through GUKED, Konika Seed Company, and Organix. GUKED provided more than BDT 9 million (\$130,000) in loans, which potato farmers used to cover production costs, including seeds, fertilizer, and pesticides. Through Konika, 91 farmers received more than BDT 3.3 million (\$47,000) to produce potato seeds, and through Organix, 45 farmers received BDT 338,000 (\$4,900) to cultivate vegetables.

E. Gender Integration in Horticulture

Women play a vital role in household food and nutrition security through homestead agriculture. This role expands to horticulture production as they keep seeds for the next crop, participate in harvesting, sorting, grading, and cleaning, and prepare to send products to market. Women's involvement in homestead vegetables is approximately 48 percent, compared to 11 to 20 percent for cereal. Recognizing the important role played by the women in the horticulture sector, both in terms of economy, food, and nutritional security of the family, PRICE has designed its interventions to effectively reach the greatest number of women possible.

In the southern rural areas of Bangladesh, PRICE organized the poorest of the poor women farmers into vegetable production groups. Through these groups, 164 women were trained on safe vegetable cultivation techniques. As a follow-up, technical assistance during the growing season was provided so that the women had proper advice and support when and where they needed it. In the potato sector, PRICE's efforts to increase production resulted in more employment opportunities for women. Through its partners, PRICE created more than 58,000 days of labor for women in activities such as potato cutting, sowing, harvesting, sorting, grading, packing, and post-harvest handling. Women were able to negotiate schedules that were convenient to them and their household duties, such as working in the morning or in the afternoon on a contract basis. Additionally, women workers were allowed to take home leftover potatoes, free of cost, which helped to increase food security in their households.

PRICE also supported the establishment of GKSSE, a women-led organic fertilizer enterprise. This enterprise employs nine women, who are now able to support themselves and their children's educations with their income. While women entrepreneurs are rarely found in the agricultural sector, PRICE has clearly shown what women can achieve with a little support.

F. Partner-wise Results in Horticulture till September 2010

F-1. Partner-wise Results in Horticulture: FY 2010

Partners	Sales Increased (USD)			No. of Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
Syngenta Seed	287,312	-	287,312	-	0	0	17,971
GUKED	1,100,725	-	1,100,725	700	209	909	96,522
GKSSE	75,222	-	75,222	99	11	110	150,159
Murail Rural Association	66,659	-	66,659	50	15	64	-
Konika Seed	221,585	-	221,585	47	36	83	-
Padma Seeds	351,900	-	351,900	7	1	8	-
Organix	189,978	-	189,978	139	31	169	5,652
Lal Teer Seeds	653,623	-	653,623	234	26	261	-
EFADF Agro Business	196,289	-	196,289	242	53	295	6,458
Agricultural Advisory Society (AAS)	2,306,929	-	2,306,929	31	7	38	2,081
Kansat Mango Farmers Association	267,634	-	267,634	674	-	674	20,058
ANKUR Mango	36,242	-	36,242	45	-	45	232
Golden Harvest Processing	299,344	364,767	664,111	-	-	-	78,261
Total	6,053,442	364,767	6,418,209	2,268	388	2,656	377,394

F-2. Partner-wise Results in Horticulture Accumulated till September 2010

Partners	Sales Increased (USD)			No. of Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
Syngenta Seed	287,312	-	287,312	-	0	0	17,971
GUKED	1,100,725	-	1,100,725	700	209	909	96,522
GKSSE	75,222	-	75,222	99	11	110	150,159
Murail Rural Association	66,659	-	66,659	50	15	64	-
Konika Seeds	244,329	-	244,329	70	41	111	58,659
Padma Seeds	351,900	-	351,900	7	1	8	-
Organix	189,978	-	189,978	139	31	169	5,652
Lal Teer Seeds	653,623	-	653,623	234	26	261	-
EFADF Agro Business	196,289	-	196,289	242	53	295	6,458
Agricultural Advisory Society (AAS)	2,306,929	-	2,306,929	31	7	38	2,081
Kansat Mango Farmers Association	267,634	-	267,634	674	-	674	20,058
ANKUR Mango	36,242	-	36,242	45	-	45	232
Golden Harvest Processing	299,344	364,767	664,111	-	-	-	78,261
Surovi Agro Industries	830	59,755	60,585	25	7	32	57,464
Al Fida Cooperative	10,145	-	10,145	-	-	-	-
TOTAL	6,087,160	424,522	6,511,682	2,316	400	2,716	493,517

SECTION II. AQUACULTURE

Overview

Many consider a healthy aquaculture sector vital to fighting hunger, malnutrition and alleviating poverty in Bangladesh. Shrimp and fish are the two major components of aquaculture in the country, and they both have great potential for growth. Fish is mostly produced for the domestic market, which is huge and suffers from unmet demand. Bangladesh shrimp is well appreciated, but represents only a small fraction of the international market.



Fertilized egg collection from tilapia mother fish

Aqua-farmers cultivate saltwater shrimp in the coastal belts and fresh water shrimp (prawn) adjacent to coastal belts. Fish farming, on the other hand, occurs in the inland fresh water bodies, including seasonal water bodies such as beels, haors, natural depressions, and oxbow lakes.

Bangladesh has approximately 2.47 million acres of suitable fresh water and brackish water land and

over 1,100 hatcheries, including 100 for mono-sex tilapia, 900 for other fresh water fish, and almost 150 for shrimp and prawn. Most of these water bodies are farmed under extensive, traditional aquaculture, and consequently generate very low yields.

One of PRICE's main focuses has been to increase productivity and improve overall production by promoting good aquaculture practices that allow for higher breeding densities and yields without increasing disease and mortality rates. Approximately 27,000 fish and shrimp farmers have been trained on improved farming technology, and 5,500 have been trained on improved management of their farms. The project has also facilitated access to better inputs, including seed and feed, as well as market linkages between farmers, depots, wholesalers, and processing plants.

At the same time, PRICE has assisted the shrimp industry to achieve compliance with export markets, both in food safety as well as in labor compliance issues.

Through September 2010, PRICE activities in aquaculture have led to more than \$34 million in additional sales, 6,556 new jobs, and \$1.2 million in new investments.

PRICE Achievements in Aquaculture till Sept 2010	
<i>Sales increased</i>	\$34.2 million
<i>New jobs</i>	6,556
<i>Investment increased</i>	\$1.2 million
<i>Farmers trained in Technology</i>	26,660
<i>Farmers trained in Management</i>	5,500
<i>Training for workforce development</i>	1,100
<i>Farmers received micro credit</i>	1,300

A. Fish

Across the country, PRICE collaborates with approximately 20 farming associations or NGOs, nine hatcheries, one seed traders association, one input seller company, one processing factory, and one NGO for dry fish (see Annex 3). PRICE assistance has reached the districts of Khulna, Jessore, Narail, Mymensingh, Sherpur, Jamalpur, Gazipur, Borguna, Barishal, Bhola, Rajbari, Shariatpur, Gopalganj, Bogra, Pabna, Kushtia, Gaibandha, Natore, Rajshahi, Lakshmipur, Chadpur, Comilla, Feni, Cox's Bazar, Chittagong, Sylhet, Moulvibazar, and Brahmanbaria. The project has linked

Achievements in Fish till Sept 2010	
Sales increased	\$21.1 million
New jobs	3,742
Investment increased	\$349,000
Farmers trained in Technology	14,000
Farmers trained in Management	5,000
Farmers received micro credit	1,300
Training for workforce development	715

farmers to quality seed-producing hatcheries and nurseries, and has trained farmers on farm management for different fish species, from pond preparation to harvest and marketing. PRICE has provided technical assistance to more than 14,000 farmers so far, including 4,600 women.

A1. Increased Access to Inbreed-Free Improved Spawns

Inbreeding has become a major problem in seed production and hatchery management in Bangladesh. Fish biologists estimate that using genetically corrupted seeds may cause 5 to 10 percent inferior growth of fish in successive generations. This phenomenon is rare in the wild, as thousands of males and females take part in community breeding during breeding season and – through natural selection - the weaker individuals eventually perish. From April to July of 2010 PRICE conducted a study to identify hatcheries producing inbreed-free fish seeds (fertilized fish eggs), and linked organized farming groups to these sources. The study, conducted on 80 randomly selected fish hatcheries in the major fish seed production districts, concluded that the most common problems in fish hatcheries include poor quality of brood (91 percent); inbreeding depression (76 percent); diseases, particularly Argulosis and Costiasis (71 percent); electricity disruption (80 percent); and water quality (low dissolved oxygen/high ammonia levels – 53 percent.) Considering the quality, size, sources of brood fish, and degree of inbreeding problems reported, it was found that 18 hatcheries in four districts (Jessore - 5, Bogra - 4, Comilla - 4 and Mymensingh - 5) produce comparatively better quality fish seeds.

In 2010, PRICE also supported the capacity build-up of nine carp and mono-sex tilapia hatcheries and farm outgrowers on the importance of producing and using inbreed free spawns, brood management, and responsible hatchery operations. PRICE worked with the hatcheries to help farmers improve farming technology focusing on the use of good quality seeds for farming. South Bay Hatchery Ltd. arranged five training programs for 230 farmers; Pori Matshya Hatchery arranged six trainings for 300 farmers, and Allawalla Hatchery and Farming Complex and North Bengal Thaitech Tilapia Hatchery trained a total of 400 farmers on improved farming. Four other hatcheries have trained 750 farmers on improved farming. Pori Matshya Hatchery arranged workforce development training for 20 workers, and Rupali Fish Hatchery has trained 150 workers.

A2. Introducing New Fish Species

PRICE's aqua team and short-term technical consultants monitored the performance of farmed species in different regions and examined price trends to provide suggestions on substitution for more profitable species also available in the country. With guidance from the project team, three partners introduced new fish species to their farming stocks. Some farmers in Phulpur Fish and Prawn Farmers Association (PFPPA) in Mymensingh introduced stinging catfish and mono-sex tilapia. The project team provided species-specific farming manuals. Seed traders' association Digerkanda



USAID team visited in Puthia, Rajshahi

Mostapona Bebohashi Bhohumuki Somity (DMBBS) introduced a high-priced glass fish known as Pabda that is considered by Bangladeshis to be a delicacy. Tarakanda Satata Mosta-Chashi Somity members of Mymensingh have been farming Thai catfish pangus, indigenous carp, and exotic carp species for years. Now they have introduced stinging catfish, mono-sex tilapia, and climbing perch with the anticipation of achieving high market prices.

A3. Promoting Better Farming Practices

In FY2010, the project supported the training of approximately 11,000 fish-farmers (including 2,800 female) on improved and integrated farming technologies. During this reporting period, PRICE conducted improved farming training sessions for the farmers mainly covering high-density and semi-intensive culture systems.

The largest groups assembled at Rakhaing Development Foundation (RDF). By September 2010, RDF arranged 29 training programs on productivity where 1,400 participants (397 female) attended in Barguna, Patuakhali, and Gazipur districts. Sustainable Development for Rural and Urban Areas (SSURDA) in Bogra arranged 20 training programs with 1,000 farmers, including 129 women.

Other significant training programs arranged by partners included Jenoseba Kendra, for 720 farmers (389 females); Unnayan Sangha, for 500 farmers (341 women); Society for Social Services (SSS), for 992 farmers (987 females); Gondhamari Motshygibi Samaboya Somiti, for 500 farmers (159 females); and Mulia Motshygibi Somiti, for 600 farmers (69 females). Smaller organizations like Muktagacha Fish Farmers' Association arranged trainings for 200 farmers, Trinamool Manobik Unnayan Sangstha (TMUS) arranged



A male-female mixed trainee group in JSK

seven productivity trainings for 350 farmers (56 females), and Barisal Aquaculture Development Society arranged six training programs for 200 farmers.

Good fish farm management and good aquaculture practice are integral to increasing productivity. PRICE led 31 training sessions on the basics of good aquaculture practice and farming without endangering eco-systems. Topics included reduction of water pollution; responsible waste management; judicious feed usages; efforts to increase natural productivity, soil, water, and health management; and prevention of disease.

In December 2009, 13 Bangladeshi aquaculture value chain partners including hatchery operators, a feed miller, a depot owner, a processor, farmers, and association/NGO personnel participated in a study tour to Thailand to observe efficient fish and shrimp seed production procedures; diverse high-yield aqua-farming; quality-grade feed manufacturing; and responsible post-harvest handling, packaging, storage, and transportation. Participants came away realizing that they were far behind in productivity and species diversification. As a result, one fish farmer renovated his fish ponds to control plankton based on a method he observed; a polyculture farmer integrated stinging catfish with climbing perch; a feed miller incorporated quality ingredients and binders to improve the feed conversion ratio of feed; and a hatchery operator replaced catfish with mono-sex tilapia seed production. The knowledge gained through this study tour was extended to new farmers through demonstration ponds and information workshops.

A4. Improved Community-based Farming

PRICE is promoting two community-based initiatives in Sherpur and Jamalpur to create livelihood options through fish farming. With project assistance, Bamunji Beel Motsojibi Samity (BBMS) trained 120 farmers on beel management, nursing, and post-harvest handling, while Nokla Motsojibi Samity (NMS) trained 150 farmers on judicious harvesting, post-harvest handling, and cool chain management. The two community-based groups have started harvesting their fish, and PRICE has already initiated dialogue with some processors for the purchase of their crops.

A5. Demonstration of Improved Farming and Harvest

During November-December 2009, Phulpur Fish and Prawn Farmers Association (PFPPA) arranged five result demonstrations moderated by the Senior Upozilla Fishery Officer and attended by more than new 500 farmers. During the same period, RDF (Rakhaing Development Foundation) organized two results demonstrations at Taltoli, Barguna. More than 200 farmers participated in the events. One of these demo events was conducted by a woman



A result demonstration of mixed carp species

farmer who had started aquaculture for the first time. At the same time TMUS also arranged three result demonstrations at Kashinathpur areas in Pabna, attended by more than 300 new farmers.

A6. Improving Farmers' Backward Linkages in Seed and Feed

In FY2010, PRICE linked hatcheries and feed mills in and around Bogra to fish farmer associations to provide quality inputs, such as seeds, at a lower cost. The TMUS farmers purchased spawns and collectively nursed them to fry/fingerling stages for use in cultivation. As a result, their production costs decreased, since the farmers used to buy fry and fingerlings from the market at a higher cost.



Hatchery-produced fish fry

PRICE arranged for 32 association members from DMBBS, the fish seed traders' association of Mymensingh, to visit an organized fish seed market at Jessore, where they learned about the coordination between hatcheries and nurseries. This information has enhanced the capacity of the Digerkanda fish seed market to serve thousands of fish farmers with quality fish seed and diversified varieties.

Bangladeshi fish farmers have generally used homemade feeds in mash form, buying ingredients and mixing those at pond sites. However, homemade feeds without binders are unstable in water. PRICE helped its partner farmers' associations to find feed in pellet form, which is stable for longer, contributing to a positive feed conversion ratio. As a result, the farmers received higher profits.

In FY2010, the project helped train 2,770 fish-farmers on improved farm management, including group procurement and group marketing, cost benefit analysis, and documentation. Jenoseba Kendra, Bamunji Beel Motsojibi Somity, Nokla Motsojibi Somity, Unnayan Sangha, Society for Social Services (SSS), Gondhamari Motshygibi Samaboya Somiti, and Mulia Motshygibi Somiti organized management trainings for their farmers.

A7. Market Research and Linkages

For facilitating export of their produce PRICE linked climbing perch and stinging catfish producers in Mymensingh with processing plants in Chittagong region. As a result, from July through September 2010, producers shipped roughly 60 to 70 tons of live climbing perch to processing plants in Chittagong.

In February 2010, PRICE held market linkage workshops between 160 fish producers in the Mymensingh region and Golden Harvest Seafood and Fish Processing Ltd. PRICE initiated a study to review the domestic market and explore export prospects for two important farmed fish species: pangus (Mekong River catfish) and tilapia, particularly those coming from greater Mymensingh, Bogra, Comilla, Noakhali, and Jessore. The study focuses on seed production facilities, nursing, fry and fingerling trades, feed manufacturing and trade, and grow-out farming and supply chain to

markets. It also evaluated processing capacity and export potential for value added products from these two species.

The project led workshops between fish processors and bulk fish growers associations, revealing prospects for exporting pangus and tilapia fillets. However, strong domestic demand and relatively high prices in the domestic market for whole tilapia and pangus, present a challenge to competitiveness in the export market.



Interviewing a nursery owner

A8. Facilitating Compliance in Processing for the Export Market

Presence of microbial contaminants result in rejection by foreign buyers of fish, even when destined for the limited ethnic markets. Factory workers in processing plants in Bangladesh usually start as unskilled labor and get on-the-job training through observation. PRICE helped Golden Harvest Seafood and Fish Processing Ltd. build the capacity of their laboratory staff on chemical, biological, and organoleptic tests for export fish and shrimp processing. PRICE provided assistance through a short-term consultant to provide laboratory based hands-on training on all aspects of laboratory tests as required.

A9. Increasing Farmers' Access to Finance

Institutional credits are difficult to access in the fish sector due to small water holdings, multi-ownership on lands, and lease-based farming. Moreover, the traditional weekly repayment model of the microfinance institutions is not suitable for the fish farmers. To overcome farmers' cash flow problem PRICE suggested a new harvest-based repayment schedule to the partner micro-finance institutions. The proposed model was accepted by the Society for Social Services (SSS) and TMUS. As a result, nearly 1,200 micro and small-scale farmers obtained loans ranging from BDT 3,000 to 15,000 (approximately \$44 - \$220), with farmers' group/association acting as guarantor of the loan. Successful implementation of this micro-finance system will prevent the farmers from harvesting premature fish, thus increasing productivity. PRICE is planning to scale up this model for other crops and also in other regions.

A10. Promotion of Over-Wintering Fingerlings

The DMBBS wanted to expand its seasonal business of fish seed trade by introducing different types of seed and aged fish seeds. With training assistance from PRICE on overwintering[†] (OW) nursing of certain species, some members have begun commercial production of OW seeds. In the reporting period, they initiated mass-scale production and contract growing of OW fish seeds for carp, local catfish, and pangus.

[†] Finfish seed production is traditionally done during monsoon, when high temperatures induce rapid growth. However, prolonged nursing over the winter is possible, and allows for fingerlings to be available as early as late January which, in turn, permits the farming of a second crop.

They are also promoting the OW fingerlings to farmers throughout Bangladesh. Traditionally, fish seed trade peaks in May through July based on the monsoon season. However, the DMBBS is promoting OW fingerlings from February to May, extending the season and increasing profit.



Over-wintered fingerlings

A11. Promoting Safe Dry Fish Manufacturing

PRICE partnered with the Nazirertek Fish-Dryer's Multipurpose Cooperative (NFMC) in Cox's Bazar to assist hygienically safe dry fish manufacturing, packaging, and marketing. An MOU was signed to conduct training programs on hygienic dry fish production, personal hygiene, and packaging. The products are mainly destined to the domestic market, with an option to export to ethnic markets abroad. PRICE will run eight training programs for 400 fish yard owners and 40 training programs for 2,000 workers until December 2011. The yard owners protect drying fish from rain and store them before shipping to the auction house in Asadgong, Chittagong. During the reporting period, eight training programs for yard owners and 18 training programs for workers were completed.



Sun drying of Ribbon fish on bamboo poles



Sun drying of mixed fish species on bamboo tray

B. Shrimp

The farmed shrimp sector in Bangladesh is divided into two sub-sectors: freshwater and brackish water. The freshwater giant prawn is known as *golda*, while the brackish water black tiger shrimp is known as *bagda*. PRICE mainly works with *bagda*, which represents around 75% of total shrimp exports and around \$400 million in value. Low productivity is one of the main characteristics of the Bangladesh shrimp sector, but flooding of the world market by small sized farmed shrimp has created a new opportunity for Bangladeshi larger sized shrimps, currently produced by very low density farming. Increasing stocking density while preventing disease outbreaks is key to increasing yields and export earnings. In order to avoid export bans, the industry also needs to avoid contamination, implement traceability, and observe compliance with Bangladeshi labor law.

PRICE is addressing sector constraints by facilitating:

- a) Improved productivity with larger sized shrimp;
- b) Promoting screened post-larvae (PL) of shrimp for virus-free production; and
- c) Compliance with international standards across the value chain.

By promoting contract growing, PRICE is encouraging improved farming methods, crop-rotation, linkage to disease-free and screened PL, awareness creation for not using banned substances, and traceable production, among others. To ensure supply of disease-free and traceable PL, PRICE works with the hatcheries in the sector and also ensures year-round supply of seeds. Apart from supporting outgrowing, PRICE also works with the processing plants for compliance to labor laws, biosecurity measures, HACCP, Standard Operating Procedures (SOP), SSOP, value added product development, and capacity build-up of their managerial and processing staff.

Through its GHERS initiative, subcontracted to World Fish Center, PRICE promoted improved farming practices and a market for virus-free, screened post-larvae. Seventeen depot owners in Bagerhat, Satkhira, and Khulna received



US Ambassador to UN and USAID Mission Director with shrimp farmers

US Ambassador to UN Visits Shrimp Value Chain

On September 29, 2010, U.S. Ambassador to the United Nations Agencies for Food and Agriculture in Rome, Ms. Ertharin Cousin, visited a PRICE-supported CST (Closed System Technology) shrimp farm at Fatehpur, Bagerhat, owned by Mr. Shajahan Mina. During the visit – accompanied by USAID Mission Director Ms. Denise Rollins and Director for Food Security, Ms. Jo Lesser -, Ambassador Cousin was able to appreciate the progress made in improving farm yields and farmers' income. After the shrimp farm, Ambassador Cousin visited Organic Shrimp Exporters Ltd (OSEL), a shrimp processing plant in Khulna that PRICE is assisting in food safety and quality compliance. Ambassador Cousin's media team included journalists from Guatemala, India, Malawi, Rwanda, Uganda, Zambia and Bangladesh. After the visit, Madam Ambassador commended this USAID intervention which covers the entire shrimp value chain, from farm to processing plant, and has market demand and food safety compliance as its guiding principles.

Achievements in Shrimp till Sept 2010	
Sales increased	\$13.1 million
New jobs	2,814
Investment increased	\$837,000
Farmers trained in Technology	12,000
Farmers trained in Management	542
Training for workforce development	427
Workers & managers trained on compliance	364

on labor rights and responsibilities. The progress achieved in this area was witnessed by the USTR and DOL representatives who visited some of the assisted plants in FY2010. Two other processing plants also received PRICE assistance for training on bio-security measures such as HACCP and SSOP. And, as part of its collaboration with the GOB's National Action Plan to combat antibiotic contamination in farmed prawn, PRICE concluded an experiment to identify the probable sources of nitrofurantoin contamination and seek ways to remove it.

In FY2010, shrimp subsector partners increased their sales by about \$12.6 million, invested more than \$830,000, and created around 2,800 jobs.

B1. The Greater Harvest and Economic Return from Shrimp (GHERS) Initiative

The GHERS initiative, implemented for PRICE by the World Fish Center (WFC), aims at increasing shrimp farming productivity and enhancing quality by introducing improved farming practices to more than 20,000 small shrimp farmers in the southwestern part of the country by the end of 2011. In this fiscal year, GHERS activities extended their reach from 2,772 farmers trained in the previous fiscal year to a total of 9,539 farmers trained by the end of this reporting period.

GHERS provided hands-on and farm-level training to three distinct groups of farmers distinguished by their investment capacity, their willingness to adopt innovative practices, and their

assistance to organize farmers under contract farming systems, and 8,000 shrimp farmers were trained on improved farm management and production techniques.

PRICE helped the shrimp industry to achieve compliance with Bangladesh Labor Law by training 364 staff and management of 10 processing plants



In **Closed System Pond Technology (CST)** the farming site is strictly isolated from the outside environment by strong dykes and culture water is treated with bleaching; the farming complex is surrounded by a fine synthetic mesh to keep crabs and other intruders out. All of this is done so that no virus source can enter the farming zone. Screened, virus-negative PL are stocked at a rate of 8-10/m² and adequate quality feeds are provided, together with aeration by paddle wheels to facilitate enough dissolved oxygen for high density farming. No finfish are allowed in the ponds. CST farming may produce two crops annually for a total of 2,500-3,000 kg of shrimp/ha.

In **Modified Traditional Technology (MTT)**, pond water is also treated with bleaching, but screened PLs are stocked at a rate of only 2-3 /m². No water intake or paddle wheels are used, and home made, instead of commercial feed, is usually employed. MTT produces only one yearly crop, with a yield of 350-400 Kg/ha. Pre-nursed, plankton-feeding carps and some *golda* are stocked together with bagda during the wet season, thus increasing overall yield and crop diversity.

Traditional Best Management Practices (TBMP) is used with farmers who can't afford or are not interested in relatively higher density farming. These farmers do not bleach the culture water and stock at a rate of only one PL/m², but do fertilize the water to enhance natural productivity, remove aquatic plants, and screen incoming water to prevent predators. TBMP farmers achieve yields of 250-275 Kg/ha/year, still approximately 20% more than traditional extensive farming.

tolerance to risk. The separate technologies developed for these three groups of farmers are: Closed System Pond Technology (CST), which is the most capital intensive and allows for the greatest density of farming; the Modified Traditional Technology (MTT), which introduces some new practices and requires a small investment, and Traditional Best Management Practices (TBMP), which emphasizes proper practices which do not require additional investments (see text box, previous page). Of the 9,539 farmers trained through GHERS, 5,215 engage in TBMP, 4,302 in MTT, and only 22 in CST.

The training of farmers was executed by extension specialists and extension facilitators whose capacity was developed earlier. During the reporting period, two trainings of trainers (TOT) were provided on improved technology to 40 extension facilitators on CST, MTT, and TBMP shrimp culture techniques and on improved quality feed in shrimp farming. Through three extension specialists and 40 extension facilitators under GHERS, PRICE trained some 6767 trainees, including 308 women. Participants learned how to increase productivity in their respective ponds by using the corresponding improved farming techniques.

B2. Screening for Virus-Negative Post Larvae

Semi-intensive shrimp farming in Bangladesh collapsed in 1997 due to an outbreak of White Spot Syndrome Virus (WSSV). One of the most important objectives under GHERS is to produce and popularize virus-negative PL of *bagda* that may ensure disease-free, healthy shrimp crops. PRICE-WFC supported Pranti Polymerase Chain Reaction (PCR) Laboratory, a private testing laboratory, in Cox's Bazaar to test shrimp seed production cycles so that virus-negative strains could be identified and traced. Testing involved three stages and is required on broods, *nauplii*, and post-larvae to confirm that the lot is virus-negative. Post-larvae is the last stage of shrimp seeds, after hatching from the eggs. Larvae are called *nauplii*; the next stage is *zoea*, and the last stage of larvae is *mysis*.

In FY2010, Pranti PCR Laboratory, in partnership with six hatcheries in Cox's Bazaar and one hatchery in Khulna, tested and certified roughly 40.5 million post larvae used by GHERS farmers. Additionally, Pranti PCR Laboratory supplied screened PL to Gazi Fish Ltd, one of only two large farms in Bangladesh that still practices semi-intensive farming and has its own hatchery in Khulna, but no PCR laboratory. Gazi tests mother shrimp and *nauplii* in Pranti and then airlifts the shrimp back to its hatchery in Khulna.



Shrimp PL Screening



Screened PL

B3. Use of Improved Feed

As with fish feed, the quality of shrimp feed is usually poor, since farmers want to keep costs low. Poor-quality feed however, affects productivity, increases pollution, and is a likely source of the antibiotic contamination that led to the voluntarily restriction on *golda* exports to Europe for six months, beginning in May 2009. PRICE is addressing this issue by promoting improved feed and its use among shrimp farmers. During the reporting period the project worked with two feed mills in the Khulna area: North Khulna Feed Mill and Satkhira Feed Mill.



Bagda, the backbone of shrimp exports

B4. Compliance with Banned Antibiotics in Farmed Prawn

The MOFL created the NAP in response to the EU's rejection in 2009 of more than 50 containers of frozen prawn suspected to contain nitrofurans metabolites, a banned antibiotic. PRICE designed and executed an experiment to determine the probable source of nitrofurans metabolites in farmed prawns and to investigate whether the contamination could be removed from live prawns by withdrawing contaminated feeds for enough days. This was done through a joint effort with the Bangladesh Fisheries Research Institute (BFRI) and the DOF under the NAP and concluded in July 2010. The results suggest feed as a probable cause of contamination and indicate that this contamination may be reduced or eliminated by modifying the diet of shrimps for 10 to 15 days before harvesting. PRICE has submitted findings to the MOFL.



Nitrofurans test site



Nitrofurans contaminated sample of prawn to be tested at FIQC lab

B5. Supporting Group Procurement and Sales

Farmers often sell their products individually to buyers, limiting revenue. PRICE educated farmers on the benefits of group sales, and facilitated these through contract growing efforts and GHERS. To buy inputs from the market, the project taught farmers to use group procurement methods, which helped them to purchase high-

quality inputs at lower prices. Farmers were also linked to the source of good quality inputs, like screened PL and hatchery PL, for traceable production.

B6. Improving Access to Finance

Shrimp farmers in Bangladesh traditionally obtain credits in the form of a promise to barter goods. Due to the scarcity of raw material for processing plants, suppliers partially finance poor farmers with seeds, feed, lime, fertilizer, and occasionally “soft loans” on the condition that farmers pay them back in shrimp. Applying this tradition of informal value chain financing, PRICE convinced depot owners to finance the cost of farmer’s inputs in shrimp production (feed, seed and fertilizer) through the contract growing systems.

B7. GAP Training on Responsible Shrimp Farming

PRICE together with KATALYST, another multi-donor funded sector development project, facilitated a TOT program on the good aquaculture practices at Khulna from November 1-5, 2009. The program was conducted by the DOF, the Bangladesh Shrimp and Fish Foundation (BSFF) and the Bangladesh Frozen Food Exporter Association (BFFEA). The program’s goal was to develop a team of core trainers who will be able to train other related stakeholders on the good aquaculture practices in coming days. A team of professionals from the US Food and Drug Administration and the Joint Institute of Food Safety and Nutrition of the University of Maryland trained 45 trainees from different organizations (universities, DOF and other value chain actors) in Bangladesh.



Inauguration on GAP training in Khulna

B8. Study Tour to Thailand to Observe Improved Farming



Aquaculture partners’ representatives at super-intensive shrimp farm in Thailand

During December 15-26, 2009, 14 representatives from PRICE aquaculture partners, seven each from fish and shrimp subsectors, comprising diverse actors in the value chains and accompanied by one PRICE representative, visited Thailand to gain exposure to improved aquaculture practices throughout the value chain. The study visit comprised formal lectures, discussions, on-the-spot observations, hands-on training on improved fish and shrimp culture, hatchery and

nursery management, feed mill and feed manufacturing, fish and shrimp transportation, storage, fish processing, and visits to farms.

The eleven day visit exposed PRICE partners to diverse markets, varied value added products, efficient hatcheries, nurseries, and processing operations, as well as a strong and competitive value chain. The visit gave the participants an opportunity to gather some first-hand experience of elements and dynamics of an advanced aquaculture system that has flourished domestically and in export markets meeting all aspects of the compliance.

B9. Compliance with Labor Regulations in Shrimp Processing Plants

The Bangladesh shrimp industry was facing a possible exclusion from the Generalized System of Preference due to an allegation by the American Federation of Labors and Congress of Industrial Organizations that child labor rules were violated in the shrimp processing factories. Although the allegations have not been confirmed, PRICE is assisting the industry to ensure that it is fully compliant with the Bangladesh Labor Law. To assess the status and train staff and workers of 10 processing firms on labor practices PRICE conducted a pilot project with BSFF. In July 2010 BSFF completed the assigned job. The BSFF identified and analyzed company documentation and practices related to the observance of labor legislation, including appointments, work conditions, factory policy, compensation and benefits, healthcare, and leave policies. They also made recommendations on how to improve labor compliance procedures and drafted relevant training materials for workers, managers, and owners. As part of the BSFF intervention, 364 workers and managers (122 female) were trained on Bangladesh Labor Law 2006, during the reporting period.



Mr. Michael Delaney, representative from USTR, at PRICE-assisted processing plant

USTR and U.S. Department of Labor Officials visit Shrimp Processing Plants participating in PRICE labor compliance training

United States Trade Representative and Department of Labor officials conducted two visits during FY 2010 to Bangladeshi shrimp processing plants, to observe labor compliance and assess the future export potential. Mr. Michael Delaney, USTR official, visited PRICE-assisted Ark Seafood in Chittagong, on 21 October, 2009. The visitor had a chance to witness an ongoing training session on compliance with Bangladesh Labor Law 2006 at the processing plant. Then, on 28-29 July 2010, Mr. Carlos Romero, of USTR and Mr. Michael O'Donovan, of the Department of Labor, visited Fresh Food Ltd. in Khulna and Rupsha Fish and Allied Ind. Ltd. in Bagerhat. The team also met with members of the BFFEA in Khulna and was informed by them about the steps the Bangladeshi shrimp industry has taken to ensure compliance with the Labor Law. During their visits to the processing plants, the U.S. government officials interviewed staff, observed PRICE-supported training programs on labor compliance, and discussed the impact of such support with the plant management.

B10. Compliance for Bio-security and other Food Safety Measures in Processing Plants

This reporting period PRICE signed MOUs to provide technical assistance to six processing plants, two in Jessore and four in Khulna. Until September 2010, needs assessments have been conducted in all six processing plants, and meanwhile two from Khulna have already started receiving technical assistance. These are Organic Shrimp Exports Ltd. (OSEL) and Rupali Sea Foods Ltd (RSFL). Five training programs on workforce development and management practices for 200 participants (including 45 females) were held at OSEL. Similarly, RSFL also arranged five training programs on workforce and management where 200 workers participated (including 58 females). The



Shrimp processing plant in Khulna

management training programs incorporated general office as well as factory personnel. The workforce development training covered bio-security measures required on processing operations, personal hygiene, HACCP, SOP, SSOP, good manufacturing practices, and value added product development.

C. Gender Integration in Aquaculture

Traditionally, fisheries and aquaculture have been considered masculine professions. Throughout the fish and shrimp value chain, including shrimp processing plants, women's participation has remained on average at three percent. There are women employed in the dry fish manufacturing yards in coastal areas, such as Cox's Bazar, but those examples are limited.

PRICE works with young adults and women as much as possible to ensure their participation in aquaculture. From PRICE's initial activities in the aquaculture sector, PRICE has taken initiative to incorporate women into activities so that at the household level women can conduct small-scale aquaculture for self-employment, opportunistic employment, and income generation. Including women in these efforts has helped resource-poor farming families to increase their fish-based consumption and limit chronic malnutrition in rural Bangladesh.

In collaboration with local NGOs, cooperatives, and associations, PRICE has utilized women's leadership to organize women's groups for the purpose of improved farming and to provide general management training to effectively run household-based fish farms. Training to more than 40 groups of women was provided, allowing them to more effectively sustain their aquaculture businesses.

PRICE was able to initiate partnership and facilitate workforce development skills training to organizations that employ a large number of women in their workforce. For example, through Naziretek Fish-Dryer's Association, PRICE helps train thousands of women engaged in fish drying in Cox's Bazar. Similar workforce

development skills training programs are occurring in several processing plants, reaching hundreds of women.

To increase their skills and to make them competitive in the aquaculture business, PRICE has worked and will continue to work with thousands of micro, small, and medium women aquaculture entrepreneurs and workers. Since many women lack collateral to access to institutional credit, PRICE assisted women entrepreneurs by linking them with micro-credit and micro-finance sources for soft loans.

Through these activities, female beneficiaries are nearly 19 percent of the total 27,000 farmers that PRICE is currently working in the aquaculture sector. This is more than six times the national average of three percent.



D. Partner-wise Results in Aquaculture

D-1A. Partner-Wise Results in Fish: FY 2010

Partners	Sales Increased (USD)			No. of Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
DMBBS Association	800,290		800,290	21	0	21	3,159
PFPPA Association	46,935		46,935	29	2	31	12,331
TFFS Asso.-1 st phase	3,574,604		3,574,604	2,221	8	2,229	17,316
TFFS Asso.-2 nd phase	1,798,987		1,798,987	144	3	147	4,638
Nokla Cooperative	157,696		157,696	15	0	15	0
Bamunji Cooperative	114,920		114,920	6	0	6	0
TMUS	199,440		199,440	37	1	37	16,560
Kahaloo Association	2,145,636		2,145,636	300	0	300	91,090
Pachpir Association	268,156		268,156	62	0	62	8,299
Murail Association	356,460		356,460	93	0	93	13,813
RDF-1 st phase	250,203		250,203	9	0	9	11,934
RDF-2 nd phase	1,790,976		1,790,976	14	0	14	28,693
SSS	0		0	9	0	9	38,913
Jonoseba Kendra	95,215		95,215	17	0	17	7,983
Golden Harvest Seafood and Fish Processing Ltd.	0	865,984	865,984	14	5	19	0
Fishtech (BD) Limited	194,348		194,348	15	0	15	14,493
Din Bijoy Enterprise	14,136	0	14,136	0	0	0	0
Vairob Fish Agency	39,068	0	39,068	0	0	0	0
Modina Fish	10,509	0	10,509	0	0	0	0
Mondal Fish	625	0	625	0	0	0	0
Satata Fish	9,566	0	9,566	0	0	0	0
Satkhira Feed	743,823	0	743,823	0	0	0	0
Total	12,611,592	865,984	13,477,576	3,006	19	3,025	269,222

D-1B. Partner-Wise Results in Fish Accumulated till September 2010

Partner	Sales Increased (USD)			No. of Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
DMBBS Association	1,262,742	-	1,262,742	113	-	113	3,320
PFPFA Association	124,111	-	124,111	76	3	79	22,146
TFFS Asso.-1st phase	10,573,618	-	10,573,618	2,655	6	2,661	62,555
TFFS Asso.-2nd phase	1,798,987	-	1,798,987	144	3	147	4,638
Nokla Cooperative	157,696	-	157,696	15	-	15	-
Bamunji Cooperative	114,920	-	114,920	6	-	6	-
TMUS	189,275	-	189,275	43	-	43	26,057
Kahaloo Association	2,145,636	-	2,145,636	300	-	300	91,090
Pachpir Association	268,156	-	268,156	62	-	62	8,299
Murail Association	356,460	-	356,460	93	0	93	13,813
RDF-1st phase	216,628	-	216,628	98	0	98	18,519
RDF-2nd phase	1,790,976	-	1,790,976	14	0	14	28,693
SSS	137,826	-	137,826	59	-	59	47,260
Jonoseba Kendra	95,215	-	95,215	17	0	17	7,983
Golden Harvest Seafood and Fish Processing Ltd.	-	865,984	865,984	14	5	19	-
Fishtech (BD) Limited	194,348	-	194,348	15	-	15	14,493
Din Bijoy Enterprise	14,136	-	14,136	-	-	-	-
Vairob Fish Agency	39,068	-	39,068	-	-	-	-
Modina Fish	10,509	-	10,509	-	-	-	-
Mondal Fish	625	-	625	-	-	-	-
Satata Fish	9,566	-	9,566	-	-	-	-
Satkhira Feed	743,823	-	743,823	-	-	-	-
TOTAL	20,244,319	865,984	21,110,303	3,725	17	3,742	348,865

D-2A: Partner-wise Results In Shrimp: FY 2010

Partners	Sales Increased (USD)			No. of Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
Gazi Fish Culture Ltd.	0	234,942	234,942	25	6	31	33,702
Din Bijoy Enterprise	4,712	75,392	80,104	4	4	8	0
North Khulna Poultry and Fish Feed	0	(9,783)	(9,783)	6	0	6	0
Aqua Star Hatchery & Agro-Complex	46,377	0	46,377	6	0	6	0
Vairob Fish Agency	5,581	66,973	72,554	5	2	7	0
Razu Enterprise	0	0	0	0	0	0	0
Mofa Fish Processing Private Limited	0	4,827	4,827	0	0	0	0
Modina Fish	1,501	18,015	19,516	2	1	3	0
Mondal Fish	125	1,749	1,874	0	0	0	0
Satata Fish	1,913	26,784	28,697	2	4	6	0
Satkhira Feed	400,520	0	400,520	38	0	38	0
GHERS by WFC	1,321,169	10,399,394	11,720,562	2,562	122	2,684	796,567
Total	1,781,898	10,818,293	12,600,191	2,649	140	2,789	830,269

D-2B. Partner-wise Results in Shrimp till September 2010

Partner	Sales Increased (USD)			No. of Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
Gazi Fish Culture Ltd.	-	332,445	332,445	31	6	37	39,512
Din Bijoy Enterprise	4,712	113,797	118,509	10	4	14	435
North Khulna Poultry and Fish Feed	-	239,130	239,130	11	0	11	-
Aqua Star Hatchery & Agro-Complex	91,304	-	91,304	6	0	6	-
Vairob Fish Agency	5,581	114,313	119,894	8	2	10	-
Razu Enterprise	-	-	-				
Mofa Fish Processing Private Limited	-	4,994	4,994	4	0	4	-
Modina Fish	1,501	18,015	19,516	2	1	3	-
Mondal Fish	125	1,749	1,874	0	0	0	-
Satata Fish	1,913	26,784	28,697	2	4.23	6	-
Satkhira Feed	400,520	-	400,520	38	0	38	-
GHERS by WFC	1,321,169	10,399,394	11,720,562	2,562	122	2,684	796,567
TOTAL	1,826,826	11,250,623	13,077,448	2,674	140	2,814	836,513

SECTION III. LEATHER PRODUCTS

Overview

The leather sector of Bangladesh performed well in FY2010, and despite the global recession, ended the year as the third largest export revenue earner for the country, behind ready made garments, including home textiles; and jute and jute products. The sector achieved growth in all three subsectors: tannery, leather goods, and footwear. This fiscal year the sector earned \$460 million in exports, including crust and finished leather (\$226 million), footwear (\$205 million), and other leather goods (\$29 million). Higher value footwear and leather goods (51 percent) have now overtaken the export of crust and finished leather (49 percent).

This fiscal year PRICE has continued its support to the value-added subsectors, footwear and leather goods. PRICE worked with lead firms and SMEs in the subsectors for workforce development and SME capacity development. PRICE leveraged the resources of member led firms for workforce development and helped create market linkages and access to finance for the SMEs utilizing industry associations to gain results. This led to the creation of more than 1,115 full time new jobs, of which 826 were for women. Also, \$165,000 in loans has thus far been awarded to four leather products SMEs, as a result of project initiatives.

<i>Sales increased</i>	\$7 million
<i>New jobs</i>	1,242
<i>Investment increased</i>	\$437,000
<i>Firms trained in Technology</i>	27
<i>Firms trained in Management</i>	47
<i>Firms received bank loans</i>	4
<i>Training for workforce development</i>	2,623

The sector employs 740,000 people and demand for labor is growing rapidly, as more foreign companies transfer production to Bangladesh. Consequently, lack of a skilled workforce is one of the biggest constraints for the industry, particularly for exporters. PRICE is assisting the sector players in developing skills of new workers through its on the job training program, in collaboration with the industry associations. During FY2010 PRICE partnered with four footwear companies to train more than 2,000 workers in cutting, prefabrication, sewing, and lasting/finishing operations.

Though a few large enterprises still control more than 90 percent of exports, the sector includes close to 2,500 micro, small, and medium sized enterprises, which supply the local market directly or by subcontracting to larger companies. These businesses, combined, employ more than 100,000 direct workers, but growth is limited because of technical and management inefficiencies, and lack of access to markets and finance. In support of SME development, PRICE built up the capacity of a number of these firms and assisted them form associations, develop market linkages, gain access to finance, and upgrade their production processes. As a result of this initiative, large enterprises such as Aarong, Jennys Shoes, and Gallerie Apex started doing business with several PRICE-supported SMEs as their subcontractors.

Quality certificates for several chemical and mechanical tests are prerequisites for exporting leather and leather products, but the existing service provider, BLSC, offers only a few tests. For this reason, PRICE assisted BLSC to develop the capacity to

conduct more critical tests necessary to detect the level of formaldehyde and chrome VI in exported leather products.

Bangladeshi leather has favorable natural features such as uniform grain pattern and strong fibers. However, improper flaying and poor preservation techniques, particularly during annual Qurbani, when 40 percent of the animals are killed, results in defects and wastage of leather. PRICE supported the leather products sector by organizing a flaying campaign to increase awareness and knowledge of flaying and preservation of hides/skins at source, thus leading to an improvement in the quality of leather available to the processors.

As a consequence of PRICE interventions, through the end of September 2010, leather sector partners increased their sales by more than \$7 million; created 1,242 new jobs, 905 of them for women; and generated new investment of \$437,000.

A. Workplace Development



Skills development training focused on young adults, particularly women

While the last financial year saw considerable growth, particularly in footwear, skilled leather sector workers are still scarce. Along with the expansion of local and existing companies, big players such as Adidas, Young One, Blue Ocean, Tata, Bengal Shoes, and Cosmos are exploring or have already moved operations to Bangladesh. An International Labor Organization study states that the present demand is for more than 50,000 new skilled workers.

In order to meet the growing demand for skilled labor, PRICE supports skills development training targeting women and youth. In collaboration with the Leather and Footwear Manufacturing Association of Bangladesh (LFMEAB), beginning in September 2009, the project worked with Jennys Shoes, Apex Adelchi, Landmark, and FB Footwear to train over 2,000 workers. Skills development includes cutting, sewing, and lasting operations, while leveraging factory resources such as machines, tools, and training materials. The trainees who successfully completed the training received job opportunities in the sector and most of them accepted the offers.

Supporting Women's Workforce Development

In the sewing and prefabrication departments of the footwear and leather goods subsectors, about 40 percent of the workers are women. Women are rarely found at the entrepreneurial and managerial levels, and the incidence of dropout and discontinuation of jobs among the existing women workforce in the leather industry is high.

PRICE supports women through its workforce skill development (technical and managerial), and SME development. An objective of PRICE is to increase job opportunities for women and to assist them in graduating to the next level as supervisors and floor managers. PRICE has so far facilitated job creation for a total of 1,242 workers, out of which 905 are women.

PRICE partnered with BLSC to conduct a training workshop for SME managers/supervisors to develop their management skills, with a special focus on cutting, prefabrication, and sewing operations. The BLSC is a project jointly implemented by the Leather Sector Business Promotion Council (LSBPC) of the Ministry of Commerce (MOC) and the Bangladesh College of Leather and Engineering Technology (BCLET). PRICE assisted four members of the group of 13 entrepreneurs called Leather Technologist Small Entrepreneurs (LTSE) in developing skills of their approximately 50 newly recruited workers.

The tripartite public-private partnership agreement between the Apex Adelchi, the Bureau of Manpower Employment Training of the Ministry of Labor and Employment, and PRICE; was put in place to train new sewing operators at the Technical Training Center, Tangail. By November 2009 a total of 279 trainees had successfully completed the machine operators' course with specialization in leather prefabrication and sewing.

B. Capacity Building and Assistance to SMEs

B1. Piloting Process Up-Gradation with Seven SMEs

PRICE launched a pilot project in May 2010 to assist seven SMEs by providing them with technical assistance and education to upgrade their production processes, particularly in manipulation and efficient use of raw materials, costing, inventory, and sequences of production. Three enterprises have implemented several recommendations such as using a brush adhesive application process, using proper container lids, using a working table instead of the floor, adopting tool management system, and applying the concept of production with efficient costing exercise.



Before Intervention



After Intervention

B2. Assisting Market Linkages for SME Suppliers

In January 2010 PRICE organized coordination between a group of leather-technologist entrepreneurs and Aarong, a premium consumer product marketing chain in Bangladesh. The meeting focused on product development and presentation. Aarong management assessed the SMEs and their products and contracted with three of them to start supplying products. PRICE linked SMEs with Jennys Shoes to leverage its underutilized sole making capacity particularly during Eid, high demand season in Bangladesh. These efforts strengthened SMEs relationship with the lead manufacturer like Apex Gallerie and resulted in additional sales and revenue for SMEs.

B3. Improving the Management Skills of Aarong Subcontractors

In June, 2010 at the request of Aarong, PRICE initiated a program to train 20 of its SME suppliers of leather goods. Through this pilot, PRICE first aimed to educate the owners of small producer firms about the importance of making improvements in their operations and then to include the workers of these firms in the education process. Areas of the training include: basics of leather, material savings and efficiency, production planning, quality awareness, workforce retention, and general management. An industrial visit was also organized by PRICE for the participants to a leading leather products factory to see better industry practices.

B4. Assistance in Learning a Quality Management System

PRICE collaborated with the International Trade Center (ITC) of Geneva by supporting five small enterprise owners from the LTSE group to attend a lead auditor training course on ISO 9001 in India, in September 2010. This training helped the entrepreneurs in assessing their practices in the area of quality management and to determining any gaps with respect to ISO requirements.



Participants at Lead Auditors Course in Mumbai, India

B5. Improving Management Skills for Bank Loan Applications

PRICE in collaboration with BLSC and the SME Foundation supported 16 SMEs to learn the basics of accounting and in particular the requirements for applying for bank loans. The training included the basic accounting tools such as how to track the profit and loss of the enterprise, how to control inventory costs, and how to prepare and maintain basic income statements.

B6. Promoting Access to Finance

Financing is a big constraint for SMEs. In May 2010, PRICE collaborated with the SME Foundation and the Ministry of Industry to facilitate a lender and borrower workshop between 23 small producers and three banks (Mutual Trust, MIDAS Finance, and Eastern Bank), and to set up factory visits for the interested financial institutions. Following this, the Bank of Small Industries and Commerce Bangladesh Limited organized similar workshops with the help of PRICE. The project also linked the LTSE SME group with the BLSC project of the ITC, which was working in the area of access to loans for SMEs. To encourage the inclusion of the LTSE group in this



Participants at Lender Borrower Meet

opportunity, PRICE arranged for the ITC consultant to visit factories of LTSE members. Seven SMEs from LTSE have been incorporated into the ITC program and four have already received loans totaling more than BDT 11 million (\$165,000).

C. Capacity Building of BLSC Lab

PRICE subcontracted the services of a Footwear Design and Development Institute (FDDI) of India consultant to help BLSC staff install and operate an ultraviolet (UV) visibility machine to detect the level of formaldehyde and chrome-VI in leather products, and also to prepare laboratory staff to perform required SOPs for other tests. Previously no one from the laboratory was capable of conducting these tests. This initiative trained nine local laboratory staff in March, 2010. Now the laboratory staff can conduct the above mentioned tests on their own and the UV machine is operational. PRICE has informed the industry through LFMEAB about this new capability and the BLSC has already received several samples to test.



Participants at UV Machine training with the lead trainer

D. Improving the Quality of Hides and Skins

The quality of any finished leather product depends on the quality of the source skin or hide. During Eid-ul Azha sacrifice, the quality deteriorates due to improper flaying, which leads to extra wastage during leather and leather product processing. In November 2009, as in the previous year, PRICE facilitated an awareness campaign on proper flaying techniques and their importance to the economy. Based on the findings of a focus group discussion conducted to assess the November 2008 campaign, PRICE targeted people who sacrifice the animals during Eid-ul-Azha, as they play a vital role in selecting professional butchers or instructing the seasonal flayers and taking care of basic preservation of hides and skins. The project team distributed leaflets in five main cattle markets (*haats*) and trained imams of mosques from 60



Imams visiting industry (tannery) to get hands on training

municipal wards of Dhaka. The imams then disseminated information about the importance of proper flaying and some basic techniques in sermons during the Eid and weekly prayer.

To enhance the program's outreach, PRICE teamed with the Asia Foundation's Leaders of Influence (LOI) program, another USAID/Bangladesh funded project, to organize a

workshop for 100 imams on proper flaying practices in Chittagong in June, 2010. The classroom training was followed by industry visits to Riff Leather and Madina Tannery, for a first-hand understanding of the issues taught in class.

E. Forum on Development of the Leather Sector

PRICE, in collaboration with ITC of Geneva, the BLSC, and the Market Development Forum, prepared an analysis of the leather sector and organized a large public event in December 2009, where key players from the private and the public sectors discussed the major issues affecting the industry and proposed actions. The overall objective of the event was to build linkages among stakeholders, to improve private-public and inter-firm cooperation in the sector, and to promote collaboration and synergies among participating donor projects.



Stakeholders addressing the Partnership Forum

F. Gender Integration in Leather Sector

Despite employing more than 700,000 people, the participation of women in the leather sector is limited due to a lack of required capacity and skills. In addition to the thin presence of women at the entrepreneurial and managerial level, the incidence of dropout and discontinuation among existing women workers in the leather industry is high. The one exception to this is sewing and prefabrication section in the footwear business where participation of women is nearly 40 percent.

Considering these issues, PRICE has been supporting women through its various programs such as workforce skill development (technical and managerial) and SME development. These programs aim to increase and sustain the participation of women workers, managers, and supervisors in the leather sector.

In the workforce skill development programs, PRICE provides opportunities for both men and women workers, with a priority to women since the quality of their work is recognized as superior and more consistent. To date, PRICE has trained more than 2,600 workers, of which approximately two thirds are women. Through PRICE interventions, more than 900 women have been employed and are now contributing to their household incomes. In addition to employment and income, PRICE has helped women in the leather sector to develop business linkages with leading firms, obtain access to finance, upgrade processes and operations, and participate in exposure visits.

G. Partner-wise Results in Leather Products

G-1. Partner-wise Results in Leather Products: FY 2010

Partners	Sales Increased (USD)			No. of Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
LFMEAB	0	4,380,017	4,380,017	233	778	1,011	140,990
Apex Shoes	-	2,301,679	2,301,679	42	339	381	75,000
Bay Footwear	-	388,339	388,339	11	12	23	-
Jennys Shoes	-	713,137	713,137	6	55	61	19,710
Landmark Ltd	-	779,050	779,050	108	298	406	43,140
Apex L/R Craft	-	-	-	12	3	15	3,140
FB Footwear	-	197,813	197,813	54	71	125	-
LTSE	184,420	5,327	189,747	10	4	14	170,290
BAG	173,261	5,327	178,588	9	3	12	86,232
KARIGAR	2,899	-	2,899	1	1	2	-
Sassy	8,261	-	8,261	-	-	-	28,986
3 Tech	-	-	-	-	-	-	31,884
SAAuthentic	-	-	-	-	-	-	23,188
BASA	-	-	-	-	-	-	5,797
BLSC	-	-	-	-	-	-	11,594
Raian Shoe	1,422,965	-	1,422,965	10	20	30	44,594
DEYA Leather	851,971	-	851,971	36	24	60	20,435
Reshilpi Development Project	2,717	-	2,717	-	-	-	-
Total	2,462,073	4,385,344	6,847,417	289	826	1,115	393,700

G-2. Partner-wise Results in Leather Products Accumulated till September 2010

Partners	Sales Increased (USD)			No. of Jobs Created			Investment Increased (USD)
	Domestic	Export	Total	Male	Female	Total	
LFMEAB	196,116	4,380,017	4,576,133	281	857	1,138	183,874
Apex Shoes	104,464	2,301,679	2,406,143	85	408	493	117,884
Bay Footwear	91,652	388,339	479,991	16	22	38	-
Jennys Shoes	-	713,137	713,137	6	55	61	19,710
Landmark Ltd	-	779,050	779,050	108	298	406	43,140
Apex L/R Craft	-	-	-	12	3	15	3,140
FB Footwear	-	197,813	197,813	54	71	125	-
LTSE	184,420	5,327	189,747	10	4	14	170,290
BAG	173,261	5,327	178,588	9	3	12	86,232
KARIGAR	2,899	-	2,899	1	1	2	-
Sassy	8,261	-	8,261	-	-	-	28,986
3 Tech	-	-	-	-	-	-	31,884
SAAuthentic	-	-	-	-	-	-	23,188
BASA	-	-	-	-	-	-	5,797
BLSC	-	-	-	-	-	-	11,594
Raian Shoe	1,422,965	-	1,422,965	10	20	30	44,594
DEYA Leather	851,971	-	851,971	36	24	60	20,435
Reshilpi Development Project	2,717	-	2,717	-	-	-	-
TOTAL	2,658,189	4,385,344	7,043,533	337	905	1,242	436,584

SECTION IV. SPECIAL EVENTS

A. America Week 2009

From December 8-10, 2009, PRICE project participated in the annual “America Week” event sponsored by the U.S. Embassy. This year America Week took place at the Parjaton Hotel in Rajshahi. This public event served as an opportunity for PRICE to showcase its work to the general public.

The PRICE booth included exhibits of the project’s work, including training modules developed by the project, exhibits of the Flaying Awareness Campaign, and samples of products grown or processed by partners, including vegetables and leather products.

PRICE distributed approximately 1,500 folders containing sector-based information, achievements, activities, and future plans. A video was shown that highlighted PRICE activities and accomplishments in aquaculture, horticulture, and leather; and the PRICE sector team leaders made a presentation to the America Week audience. This open forum was an opportunity for the general public to ask specific questions about the project and its activities.



US Ambassador visiting PRICE's stall in America Week, Dec '09

B. SME Financing Fair 2009

PRICE along with 26 financial institutions and banks participated in the ‘SME Financing Fair’ on December 8-9, 2009. With a goal to bring all who are working for SME financing under a single umbrella and to promote, support, and strengthen the growth and development of SMEs in all productive sectors of the economy, the Dhaka Chamber of Commerce and Industry and the SME Foundation jointly organized this event. The SME Foundation’s goal was to create awareness among the entrepreneurs

about the new and available SME financing schemes and sources. The Prime Minister of Bangladesh, Sheikh Hasina inaugurated the fair, which was held in the Pan Pacific Sonargaon Hotel, Dhaka. Through this event, the organizers expected to help bridge the gap between entrepreneurs and financial institutions.



PRICE's stall in the SME Financing Fair, Dec 2009

PRICE took the opportunity and disseminated information about its activities in favor of access to finance for the micro, small, and medium

enterprises (MSMEs) in the aquaculture, horticulture, and leather sectors. At the same time, PRICE was able to introduce the project to the financial institutions that work with the SMEs. Mr. Faruk Khan, Minister of Commerce, Mr. Dilip Borua, Minister of Industry, Mr. Saleh Uddin Ahmed, Ex-Governor of Bangladesh Bank, and officials from the participating financial institutions all visited the PRICE stall.

C. Stakeholders' Meet for Work Plan 2011

In order to formulate its work plan for FY 2011, PRICE organized a series of workshops and meetings with its existing and potential development partners in the three sectors. The objective of these workshops and meetings was to understand the changing reality of the value chains and the constraints and needs of the stakeholders, in order to produce a more relevant and effective blueprint for future activities.

For the horticulture and aquaculture sectors, the inputs were collected through four workshops organized by PRICE: two in Bogra on August 10-11, 2010, one in Jessore (a joint workshop for two sectors) on August 18-19, 2010, and one in Mymensingh (for aquaculture) on August 26, 2010. A total of 49 partners from the aquaculture sector and 12 partners from the horticulture sector participated in these workshops.

From PRICE, sector technical teams, the value chain/business development team, and the monitoring and evaluation (M&E) team attended the workshops.

During the workshops, each of the partners shared their experience of collaboration with PRICE, described their major constraints and challenges, and made suggestions for adopting interventions to overcome the challenges across the respective sectors. In the Jessore workshop, the participants were engaged in group work to identify the key constraints of the sector and also suggested suitable interventions to overcome those.

Mr. Aniruddha H. Roy, CO-TR, PRICE from USAID Bangladesh, and Ms. Rebecca Leach, Director, Chemonics home office, joined the Jessore workshop. After the group presentation and/or individual feedback, an open discussion on the key issues took place. Later, PRICE's M&E team provided the partners with guidance on project requirements for partners' record keeping.



Stakeholders' Meet in Jessore, 18 Aug 2010

In the case of leather, during July and August the sector team arranged a series of meetings with approximately 40 value chain actors and stakeholders, including large and small entrepreneurs, academicians, service providers, associations, government officials, and development partners. The objective of these meetings was two-fold: to get feedback on the effectiveness and efficiency of the existing interventions, and to get recommendations for next year's interventions. These meetings were Dhaka based and organized in two modalities: 1) focused group discussion (groups of 5-6 members each), and 2) individual meetings.

ANNEXES

ANNEX 1

PRICE PERFORMANCE: FY 2010 AND ACCUMULATED

Indicator & Sector	Unit	Life of Project Target	FY 2010 Achievement		End of FY 2010 Accumulated Achievement	
			Achievement in FY 2010	% of Achievement of FY Target	Achievement till Sept '10	% of Achievement of LoP Target
Total Value of Sales Increased	USD	200,000,000	39,343,393	98%	47,742,967	24%
Domestic		116,994,616	22,909,005	143%	30,816,494	26%
Export		83,005,383	16,434,388	68%	16,926,473	20%
Aquaculture		105,000,000	26,077,767	97%	34,187,752	33%
Horticulture		40,000,000	6,418,209	107%	6,511,682	16%
Leather/Leather products		55,000,000	6,847,417	98%	7,043,533	13%
Number of Full-time equivalent Jobs Created	Number	40,000	9,585	96%	10,514	26%
Aquaculture		26,000	5,814	89%	6,556	25%
Horticulture		10,500	2,656	106%	2,716	26%
Leather/Leather products		3,500	1,115	112%	1,242	35%
Male		34,383	8,212	117%	9,052	26%
Female		5,617	1,373	46%	1,462	26%
Total Value of Investment Increased	USD	4,000,000	1,870,585	187%	2,115,480	53%
Aquaculture		2,100,000	1,099,491	220%	1,185,379	56%
Horticulture		1,000,000	377,394	189%	493,517	49%
Leather/Leather products		900,000	393,700	131%	436,584	49%
Number of persons participated in WF-dev prog	Number	15,000	3,137	85%	3,861	26%
Aquaculture		4,000	1,112	111%	1,142	29%
Horticulture		2,500	0	0%	96	4%
Leather/Leather products		8,500	2,025	101%	2,623	31%
Male		8,042	1,064	43%	1,359	17%
Female		6,959	2,074	173%	2,503	36%
No. of workers and managers trained on Bangladesh labor laws 2006	Number	1,064	364	107%	364	34%
Aquaculture		1,064	364	107%	364	34%
Horticulture		0	0	N/A	0	
Leather/Leather products		0	0	N/A	0	
Male		732	242	102%	242	33%
Female		332	122	120%	122	37%
Number of Firms and farmers receiving USG assistance to improve management Practices	Number	31,300	4,613	231%	7,098	23%
Aquaculture		26,047	4,003	222%	5,335	20%
Horticulture		5,053	563	375%	1,716	34%
Leather/Leather products		200	47	94%	47	24%
Male		24,519	3,089	221%	5,157	21%
Female		6,781	1,524	254%	1,941	29%
Number of Firms and farmers receiving USG assistance to access formal loan or micro-credit	Number	7,025	2,239	746%	2,368	34%
Aquaculture		4,110	1,198	489%	1,327	32%
Horticulture		2,900	1,037	2074%	1,037	36%
Leather/Leather products		15	4	80%	4	27%
Male		3,502	1,108	528%	1,173	33%
Female		3,525	1,131	1257%	1,195	34%
Number of firms and farmers receiving USG assistance to invest in improved technologies	Number	72,300	23,056	576%	31,995	44%
Aquaculture		58,600	18,735	625%	26,660	45%
Horticulture		13,512	4,294	452%	5,308	39%
Leather/Leather products		188	27	54%	27	14%
Male		60,880	19,766	670%	26,621	44%
Female		11,420	3,290	313%	5,374	47%

ANNEX 2

Performance Management Plan

The M&E system is the basis for quarterly and annual reports to USAID. The PRICE team collects and analyzes performance information regularly; PRICE not only collects performance and impact data; it adds value to the raw data by performing appropriate analysis and providing context for data interpretation, thereby transforming raw data into useful information. Results from the analyses help determine whether adjustments to the project implementation plan are required. Finally, this information is conveyed to relevant internal and external parties through communications (i.e. knowledge sharing) and achieves impact as knowledge is acted upon. An understanding and agreement among all stakeholders of the project is developed to establish an effective performance management plan. All of them are the users of the system.

a. Features of the System

The M&E system is designed to involve all technical team members and project counterparts. This approach has several benefits.

Efficiency. Because technical team members and counterparts have first-hand knowledge of their activities and resulting impacts, they are best suited to efficiently collect and verify basic M&E data in their respective technical areas.

Ownership. By being involved in project M&E efforts, technical team members can ensure that the information generated is relevant and consistent with the interests of the project while our counterparts will see the demonstrated success of reforms.

Feedback. Having collected and analyzed M&E information, technical team members and counterparts are aware of project progress and will be able to use M&E information to guide project implementation.

The project M&E is responsible for organizing data collection. They ensure that project team members have the necessary tools to collect data and that they collect it consistently and at the appropriate frequency. They verify data quality and analyze and report trends. Annually, they review the appropriateness of the PMP and make necessary additions or adjustments to the existing indicators. The COP/DCOP supervises the overall M&E system. The technical area specialists are responsible for managing the process of primary data collection and entry in their respective technical areas. They then use the information to make management decisions about implementation activities. These technical specialists communicate progress to PRICE counterparts informally during the course of technical assistance and formally in quarterly reports to help them make decisions about necessary and priority interventions.

PRICE collects basic M&E data from the various administrative and technical records of the project, specially-designed surveys, and focus groups. PRICE also consults records, statistics, surveys, and databases maintained by the Government of

Bangladesh (GOB), USAID, other donors, and NGOs as additional sources of data. There must be a balance between M&E data collection and technical work. Our M&E system is designed to allow the efficient collection of data by project staff or counterparts.

b. The Indicators

The basic premise of the project is that true poverty reduction is about ensuring decent, sustainable jobs for vulnerable groups, with such jobs arising from increases in sales and investment across value chains in response to market demand. Indeed, the PRICE contract stipulates that sales, job, and investment increases are the essential project performance targets. As such, the focus of PRICE performance indicators is on sales, jobs, and investment—particularly for the benefit of women, young adults, and SMEs—to achieve equitable growth. These are the performance indicators for the overall strategic objective. All performance indicators have specific targets for the life of the project.

PRICE also uses tracking indicators that allow the project to track other aspects of its work and to support requirements for overall USAID reporting. For example, tracking indicators include disaggregation of performance indicators by gender, age, sector, region, exports, and SMEs. These indicators also track the number of SMEs receiving PRICE assistance and financing, training metrics, and other measures.

PRICE primarily collects data on performance and tracking indicators relevant to activities directly implemented by the project in collaboration with counterparts. This principle of “manageable interest” helps ensure that the results reported by PRICE’s M&E system are within the project’s ability to influence, particularly at the KRA level. Through these performance and tracking indicators, PRICE is able to accomplish the following:

- Capture and communicate major project impacts
- Track implementation progress against targets
- Supply information concerning major PRICE activities
- Identify problems constraining performance and resolution
- Contribute to USAID’s own performance management and reporting needs

Performance of the project and of the three sectors (Aquaculture, Leather and Horticulture) has been measured using eight defined indicators so far. Two types of indicators have been used to monitor PRICE’s contribution to (1) assessment of the impact of PRICE’s interventions and (2) key indicators of the global U.S. Foreign Assistance Framework. The first category is called custom indicators and the second is called common indicators. *Custom* indicators assess impact or outcome of the project interventions. *Common* indicators are used to report on PRICE’s contribution to the global results of priority program areas of the U.S. Foreign Assistance Framework. All these indicators are measured quarterly or annually throughout implementation in order to evaluate progress towards targets agreed with USAID.

While the indicators included below are intended to be reported on over the life of the project, it is likely that adjustments will be necessary over time. Annually, PRICE

reviews the PMP in coordination with USAID and other counterparts, and modify indicators as necessary.

Critical Assumptions

In designing the PRICE M&E system, PRICE focused on indicators within the manageable interest of the activity. This approach allows the project to measure impacts that can, to a large extent, be attributed to the project. The project's ability to demonstrate improvement in these measures is based on the following assumptions:

- Absence of sociopolitical instability
- No major agro-climatic shocks during the project period. These include major climatic shock such drought, floods and other weather hazards.
- Generally stable fiscal and monetary policy
- Willingness of project counterparts and beneficiaries to carefully consider and implement project recommendations
- Access to available statistics and cooperation in conducting surveys

Custom Indicators

PRICE has used five custom indicators and three common indicators. The custom indicators are:

- i. Indicator 1: Total value of sales increased:
Justification: Economic activities are largely measured by the creation of sales.
It is the aggregation of the increase in total value of gross sales of assisted firms that can be attributed to PRICE activities. It is calculated in United States dollars and disaggregated by domestic and export sales.
- ii. Indicator 2: Total number of full-time jobs created:
Justification: True poverty reduction means having a decent job with jobs arising from increases in sales and investment across the value chains in response to market demand.
Full-time equivalent jobs will be defined as those equal to 260 work-days per year for non- agricultural production and 150 days for agricultural production (given the seasonality associated with agriculture work). Only new jobs will count, calculated by taking the total number of work days and dividing by 260 or 150, as appropriate. A new job will be attributed to the year in which the job originated.
- iii. Indicator 3: Total value of investment increased:
Justification: Economic activities are largely measured by increased investment.
It is the aggregation of the increase in the total value of investment of assisted firms that can be attributed to PRICE activities. Investment will include loan and private equity. It is calculated in United States dollars and disaggregated by domestic and export sales.
- iv. Indicator 4: Number of persons participating in USAID workforce development programs:

Justification & Management Utility: This indicator measures the number of individuals who enrolled in USG-funded workforce development programs. It is assumed that increased access to quality programs will result in a more skilled, adaptable workforce.

It will give the number of persons participating in USG-funded workforce development programs including, technical and vocational programs and workforce readiness programs.

- v. Indicator 5: Number of staff (workers and managers) trained on key issues of Bangladesh Labor Law 2006*:

It will give the number of persons (workers and managers) participating in USG-funded training programs on key issues of Bangladesh Labor Law 2006.

*It has replaced an older one upon consultation with USAID.

Common Indicators

The common indicators are as follows:

- i. Indicator 1: Number of firms receiving USG assistance to improve management practices:
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by adopting improved management practices. This indicator measures the number of firms that receive USG assistance to improve their management practices (financial management, strategic planning, marketing, etc.).
- ii. Indicator 2: Number of MSMEs receiving USG-supported assistance to access bank loans or private equity:
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by accessing capital and increasing investment in productive assets.
Number of MSMEs who are receiving assistance from USG supported sources to obtain bank loans or private properties.
- iii. Indicator 3: Number of firms receiving USG assistance to invest in improved technologies:
Justification & Management Utility: Firms improve their productivity, and in turn their competitiveness, by investing in new technologies.
It is the number of MSMEs who are receiving USG assistance.

Indicator reference sheets have been prepared for each indicator in order to provide more detail on indicator definition, units of measure, justification, data collection, and where possible, proposed targets.

c. Use of Case Studies

In some cases, case studies are used to provide deeper understanding of progress or to complement data collected by M&E. However, this should not be confused with the qualitative indicators. This is a very subjective approach and presents a plausible case that progress is being made by using illustrative examples. This is not used as substitute to the other precise measures. Case studies are being prepared by the Communication personnel of the project, under direct supervision of COP. Sector Team Leaders and others can come up with the idea of any seemingly interesting

cases being observed within the boundary of Project activities and the resulting impacts. Four types of case studies are prepared: case study, success story, first person story and, photo story. Usually 12 case studies are prepared each year which are submitted to USAID with quarterly and annual reports and then uploaded in the PRICE website.

d. Source of Data

Secondary Source of Data

PRICE M&E uses both primary and secondary sources of information to measure the indicators. Secondary sources can be a range of organizations including the government of Bangladesh (e.g. ministries), EPB (Export Promotion Bureau), DoF (Department of Fisheries), business associations, international organizations such as the World Bank, United Nations, universities, commercial firms and implementing partners like BSFF, BFFEA etc. Data is collected in regular intervals or based on need and a database is maintained for that. This is used for analyzing industry trend, project and sector performance etc.

Primary Source of Data

Primary sources of data are the partners or the beneficiaries themselves. For the three custom indicators (increase in sales, creation of jobs and increase in investment), the source of information is the partners or beneficiaries themselves. PRICE collects data from them directly. PRICE has contract-bound targets in these three indicators. For custom indicator 4 & 5 and common indicator 1 & 3, data is taken from the quarterly training reports produced by the project Training Specialist, and adjusted for the indicators' requirement. Such adjustments include ignoring double-counting when one MSME has received training twice in the same category of assistance, i.e. improved management practices. For common indicator 2 (assistance to access bank loans or private equity), data is collected by regular monitoring of the partner. Sample survey method is not used for this indicator because the extrapolation of survey results might contain high sampling error.

e. Baselines

Baseline is the value of an indicator before the commencement of activities, used for comparison when measuring progress toward a result. Baseline periods are taken as one year right before the impacts are expected on the partners. PRICE technical team collects baseline information during the process of making MoUs or growth plans with the partners. However, the quality of data collected at that time may not be the optimal because the technical team has only initial idea about the partner at that point. So the data collected during the MoU process needs to be adjusted sometimes. For the producer groups or associations or cooperatives with hundreds of farmers, baseline data is collected during the first training sessions conducted for the farmers. The hired consultants as well as the technical team members present in the training sessions collect the data from the partners in an organized way.

f. Data Collection Tools

Data Elements

Many of the project's proposed indicators are aggregate indicators, made up of various data elements. M&E works with each technical team and counterpart to design database spreadsheets, forms, and surveys to capture and manage these data elements.

Tools

Formats for data collection have been designed by the PRICE M&E taking suggestions from the technical team. From time to time, these have been modified to fit the project requirement. PRICE uses M&E-designed formats to collect data on the first three custom indicators (increase in sales, creation of jobs and increase in investment) based on the different types, sources and methods of data collection. Detailed guidelines are attached with each format. All filled out data forms are signed by the interviewees and the interviewers.

There are other indicators which are related to training or assistance provided by PRICE. Quarterly Training Reports generated by the PRICE Training personnel is the source of information in this case.

g. Methods of Data Collection

Performance of the partners is collected quarterly after the baseline period ends. The quarters are calendar quarters. Baseline and quarterly performance data are collected in two ways: partner interview, and, sample survey. The first method (partner interview) is suitable for the individual SMEs PRICE is working with. As the name suggests, the source of information for this method is the partner or client with whom the project is working with. The approach is to proceed in a way of discussion with the partner enterprise and lead the discussion according to the need for information on performance. The partner might recall the information from memory or might check relevant business records for providing the information. Format for recording the gathered information were designed by the M&E. The interviews are conducted by taking assistance from the PRICE technical team who have contact with partner enterprises and thus can easily collect data from them ensuring the quality of data.

The second method for data collection, sample survey, has been used because in some cases performance data on sales, jobs and investment was not readily available from the partners. Those partners do not have any organized way of keeping records on parameters like sales, jobs or investment. Thus to collect data from those partners such as fish farmers' associations who have large number of members (from 60 to 900), sample survey method has been used. The source of information in this case are the beneficiaries of the interventions, i.e. the members of the associations etc. These surveys can be of two types: a) with statistically viable sample size, b) with a minimum sample size of 30 or larger (to approach to normal distribution).

For *type a* survey, statistically viable sample size is calculated beforehand considering the character of population to be surveyed. Professional survey teams work for data collection after taking detailed briefing on the project and process of data collection from the PRICE technical and M&E teams. Formats for data collection are provided

by PRICE M&E. Sample points are selected at random. However, the cost and time required for conducting this type of survey for each partner with combined body of micro enterprises were considered huge to be conducted quarterly. Thus it has been decided that from now on PRICE will conduct this type of full-fledged surveys only annually, at the end of US fiscal year, September.

For *type b* survey, a minimum sample size of 30 or larger is taken. Statistical viability behind such decision is that when the sample size is greater than 30, the distribution approaches normal distribution. Also the homogeneity in the population (similar type of land, weather, availability of inputs, market linkage, sharing of knowledge etc.) is considered here. For the quarterly reports, these types of small surveys are conducted from now on. However, these quarterly survey results are verified during the later annual survey.

Data Collection by Third-Party

If necessary, PRICE may subcontract to a local research entity to conduct wide-scale surveys for this performance monitoring plan. Because of the huge size of surveys required at the end of each year, PRICE hires third party professional survey teams. These third party survey teams ensure the integrity of data to some extent as they are not involved in the project. M&E selects the surveyors from a pool of candidates, given the required qualification of a surveyor.

Data Entry

For the data collected on enterprise performance in each quarter on the first three indicators, the respective Sector team performs initial data entry in the soft copy of the Enterprise data format (in Excel). This is later checked by M&E and confirmed for final submission. M&E then enters the data into the M&E database.

For the sample surveys conducted, appropriate format for data entry is required. Format for data entry is prepared by M&E. Easy to use MS Excel format is being used. For the small quarterly surveys of sample size 30, data entry is usually done by the respective Sector Team (or in some cases, the M&E Specialist) who have collected data. For the bigger surveys conducted by hired survey teams, data entry is done by the hired professional data entry operator. These third party survey teams provide data in soft copy as well as the hard copies of filled out formats.

h. Quality Control

Data Quality Analysis

M&E Team conducts visits to some sources of data to verify the collected data. These are random verifications and conducted without prior notice. Data verification is also done over telephone with the partner or beneficiary. M&E team talk to the partner or beneficiary and in this way, check back with the data already at hand. If any discrepancy is observed, it is consulted with the technical team before correction. At least 10% data verification is done as advised by USAID. If required, M&E team takes help from the technical teams for verification. After verification is completed, M&E signs on the data formats.

After that, the PRICE technical team provides initial quality control for the various raw data elements. Sector team examines the data to identify common errors

including logical inconsistencies, out-of-range values, significant departures from trends, or other errors so that they can be immediately addressed.

The project M&E is responsible for data quality control after data entry. Around 10 percent of the tabulated data is compared with the raw data forms to ensure accuracy of data entry. M&E then perform basic data analysis and tabulation to identify potential erroneous data. When errors are identified early, M&E make appropriate corrections by coordinating and consulting with counterparts as appropriate.

As some indicators' information is collected from the training reports, the data quality of training report is also important. To ensure that quality, the Training Specialist conducts visits to the ongoing training sessions, consults with the partners and beneficiaries, checks the quality of training administration etc. and provides on-spot recommendations. S/he also gives the feedback to respective Sector team.

Data Quality Criteria

Five related standards are used to examine data quality in more depth[‡].

Criteria for Good Data Quality

1. Validity
2. Precision
3. Reliability
4. Timeliness
5. Integrity

(1) *Validity*. An indicator should clearly and adequately represent the intended result.

- *Attribution*. Does the indicator measure the contribution of the project?
- *Bias and/or Sampling Errors*. Are there any biases or sampling errors that affect the data?

(2) *Precision*. Data should be sufficiently precise to present a fair picture of performance and enable management decision-making at the appropriate levels. Also, there should be a sufficient degree of confidence in the data's accuracy.

(3) *Reliability*. Data should reflect stable and consistent data collection processes and analysis methods over time, so that changes in data are not due to changes in the data collection method.

In other words, if the data collection procedure were repeated, the same result should occur.

(4) *Timeliness*. Data should be timely enough to influence management decision-making. There are two key aspects of timeliness. First, data must be available frequently enough to influence decision-making. Second, data should be current enough when available.

[‡] Definitions are derived from USAID Programming Policy, ADS Chapter 203 Assessing and Learning, p. 20.

(5) *Integrity*. Data that are collected, analyzed, and reported should have established mechanisms in place to reduce manipulation. There are generally two types of issues that affect data integrity.

The first is inaccurate transcription. For example, a number might be incorrectly entered into a database system or recorded in a performance report. Data integrity is at greatest risk of being compromised during collection and analysis. The second, and more complex issue, is whether there is any incentive on the part of the data source to manipulate the data. For example, if a project obtains data from stakeholders who depend on funding from the project, the stakeholder may have an incentive to skew data.

Data Quality Analysis (DQA) by USAID

USAID conducts annual DQA visits to PRICE project areas and meets partners, stakeholders, consultants. The team discusses with the partners, beneficiaries and also check on some required documents on the spot. USAID also meets PRICE personnel for this and discusses the whole data collection, quality control and reporting process in detail. Based on that, USAID prepares its annual DQA report for the project.

Potential for Double Counting

PRICE works to minimize potential double counting through close coordination between sectors and technical teams. The project M&E reviews indicators with each team and identify areas where overlapping between sectors may occur. Once identified, the teams work together to determine how the data will be monitored and reported.

Double counting may also occur between PRICE and other USAID projects operating under SO 12. The M&E will identify these situations and work with partner projects to determine if the results may be better reported through one or the other project. However in some situations, it may be appropriate for both projects to monitor the same data. In these cases, the project may still monitor and report on the data but will report the magnitude of potential overlaps. With this information, USAID is able to adjust for double counting when consolidating indicators from various partners.

i. Data Analysis

After ensuring data quality, the data is processed and analyzed by the PRICE M&E. MS Excel program has been used for the processing and analysis of data so far. Separate processing and analysis techniques are used for data collected from enterprises directly (by using Enterprise Data Format) and the data collected from the combined body of beneficiaries, i.e. associations or cooperatives (by using sample survey method and format). Data from sample surveys is extrapolated for getting the figure for the whole populations (taking cultivable land area as the basis). PRICE has a plan to establish a software for data entry and analysis of the collected data.

However, the process of measurement of performance is same for both: comparing performance period results with the baseline period data. The performance period data is compared with the same period in baseline and the resulting change is taken as performance. For example, while calculating quarterly increase in sales (custom

indicator 1) of a partner, the gross sales of the partner in that particular quarter is compared with the baseline sales of the partner in the same quarter in the baseline year. That means:

Increase in Sales in the quarter = Value of Sales in the quarter – Value of Baseline Sales in the same quarter

In each sector, all the partners' performances are summed up for getting the aggregate performance for the sector. Then the three sectors' performances are summed up to get the project performance.

While analyzing the data, M&E focuses on the segregation required by the definition of an indicator, i.e. by sector, age, region, export-import etc. After that, the quantitative achievements are linked back to the qualitative improvements by the partners. Qualitative results are collected through regular M&E activities as well as sector activity reports. M&E takes the consent of technical team before establishing such relationship in the analyses.

Attribution:

Obviously PRICE alone is not attributable for the total improvement observed by the partners. However, considering the difficulty in isolating attribution for agro sector where there are a multitude of variables that are impossible to control or easily predict (such as weather and commodity prices), this report simply takes PRICE as one of the attributable factors behind the improvement. Any possible overestimation will be offset by the multiplier effect of the project which PRICE does not measure as performance.

ANNEX 3

PRICE PARTNERS

HORTICULTURE SECTOR

Agriculture Advisory Society (AAS): is a non-profit, non political, rural service provider and civil society organization. AAS was established in 1989 and is registered with the NGO Affairs Bureau. The focus of the organization is to strengthen the agriculture sector of Bangladesh. The AAS office is located in Muhammadpur, Dhaka.

ANKUR: A private agri-businesses enterprise established in 2005 in Chuadanga. In 2009-10, ANKUR started mango production and marketing through contract farming with 500 mango farmers in Chuadanga and Meherpur (Kustia).

Bhaterchar Krishok Unnoyan Bohumukhi Samobay Samiti (BhaKUBSS): Formed in 2009 with a commitment to improve the economic condition of vegetable farmers of Bhaterchar and surrounding villages in Narsingdi. At present the association has 400 members.

Environment Friendly Agricultural Development (EFADF) Agro Business: The commercial wing of EFADF, an NGO working in Khulna region with more than 1750 smallholder horticulture farmers (with 33 decimal average farm size) for increasing their productivity and income. EFADF Agro Business was launched in 2009 to initiate safe vegetable production and marketing through contract farming, with 500 horticulture farmers.

Golden Harvest Agro Industries Ltd (GHAI): Founded in 2006 as a private limited for-profit company with a commitment to process and export quality agricultural products from Bangladesh. It is the only frozen vegetables company in Bangladesh, with a factory located at Gazipur, near Dhaka. The company produces different types of ready to cook snacks, french fries, and frozen vegetables.

Gram Unnyan Kendra Enterprise Development (GUKED): The business wing of Gram Unnyan Kendra (GUK), a Bogra-based NGO. GUK launched this initiative in 2009 and has applied for registration with joint stock company. Currently, it has been working with 1,500 horticulture farmers to establish a contract farming system.

Grameen Krishok Shohayok Sangstha Enterprise (GKSSE): The business wing of Grameen Krishok Shohayok Shangstha (GKSS), a North Bengal based NGO. GKSSE is located in Bogra and was registered in 2009. The goal of the entity is to produce and market compost in North Bengal. In FY2009-10, GKSSE produced and sold about 382 MT of organic fertilizers.

Kansat Mango Farmers Multipurpose Cooperative Society Limited (KMFMCSSL): A registered mango farmers association founded in 2009. The association is located in Chapai Nawabganj, constituting 240 mango farmers.

Konika Seed Co. Pvt. Ltd.: A seed company located in Chuadanga. The primary focus of the company is to produce and market quality potato seeds in Bangladesh. In 2009, KSCPL worked with 92 contract farmers to produce potato seeds and vegetable seeds on 82 acres of land.

Padma Seeds: A horticulture seed company, located in Jhenaidah. The company started its operation in 1992 with a commitment to supply quality seeds to the local farmers. At present Padma is producing vegetable seeds through contract farming involving 150 farmers in 75 acres of land.

Murail Rural Development Multipurpose Cooperative Society Ltd (MRDMCSL): Founded in 2008 as a registered farmers' Cooperative in Murail, Bogra. The association has 230 members, farming mostly potato and other horticulture crops.

Organix: An agro enterprise, established in 2009 to work with smallholder farmers through establishment of contract farming. Organix is a sister concern of PATHIKRIT, an NGO working in Khulna region. Organix is working with 150 horticulture farmers.

Rural Development Academy (RDA): A government funded development institute established in Bogra in 2000. RDA has been producing disease-free and quality potato seed since 2001. The capacity of RDA TC-lab is limited, but they have gathered expertise in producing disease-free plantlets and good quality breeder and foundation seeds.

Seed Potato Growers' Cooperative Society Ltd (SPGCSL): An association of potato seed farmers founded in 2010 in Rajshahi. The association has been working with 884 farmers using tissue culture technology.

AQUACULTURE SECTOR

Fish

Adamdighi Khudra-Motsa Beboshahi-Samity (AKBS): A local aquaculture business association; established in 1990 with a commitment to produce good quality seeds and table fish (mainly catfish), for domestic markets. AKBS is a fish farming, fish seed and table fish trading group constituting 200 members.

Agriculture Advisory Society (AAS): A non-profit, non-political, rural service provider and civil society organization. AAS was established in 1989 and is registered with the NGO Affairs Bureau. The focus of the organization is to strengthen the agriculture sector of Bangladesh. The AAS office is located in Muhammadpur Dhaka.

Allawalla Hatchery & Farming Complex (AHFC): A private enterprise engaging in fry production, nursing, and farming of table fish (mono-sex tilapia) that sells to local markets. It was established in 2003 at Mazerghat, Kohroshkol, Cox's Bazar.

Bamunji Beel Motsojibi Samity (BBMS): A community-based fish farmers group in Bamunji, Jamalpur, with 120 members. BBMS was established in 2005. The group has taken lease of a 226 acre public owned water body in a beel for fish farming.

Barisal Aquaculture Development Society(BADS): A local voluntary aquaculture-based association; established in 2008 with a commitment to produce quality table fish for domestic markets. Currently the organization is working in Barishal Sadar with 350 farmers.

Chitralatha Aqua Park Ltd. (CAPL): A private enterprise engaging in fish fry production, nursing and farming of table fish that sells to local markets. It was established in 2009 at Chatak, Kasinathpur, Satiha, Pabna.

Digerkanda Motsapona, Beboshahi-Kollan Bohumukhi-Somabaya-Samity (DMBBS): An association of fingerling traders, established in 2003 and located in Mymensingh. The association constitutes 75 members.

Fish Tech: Fish Tech is an aqua farming related input seller that sells vitamins, minerals, medicine, probiotics, soil, and water health improvement ingredients, with a network all over the country.

Golden Harvest Seafood and Fish Processing Ltd. (GHSFP): Founded in 2006 as a private limited for-profit company with a commitment to process and export quality agricultural products from Bangladesh. The GHSFP was pioneer in Thai catfish (pangus) filleting for export purposes in the country. The processing plant has amassed modern machineries for processing, and laboratory supplies for compliance to bio-security obligations.

Jana Seba Kendra (JSK): A woman-led, small NGO with its main office in Dhaka and field offices in Feni, Chittagong, Rajbari, and Madaripur. JSK was established in 1989 and has experience working in aquaculture. JSK recently has organized 900 fish farmers (50% women) for introducing improved farming practices.

Kahaloo Motsa-pona Utpadonkari Samaboya-Samiti (KMUS): A local aquaculture association located in Kahaloo, Bogra. It was established in 1994 with an objective to produce high quality table fish for the local and foreign markets. KMUS is also producing and marketing quality aquaculture products in the locality.

Kahaloo Matshya Chashi Samoby Samity (KMCS): A fish farmers' group in Kahaloo, Bogra. The group was established in 2006 and constitutes 200 members of medium and large aquaculture farms.

Ma Fatemia Fish Hatchery (MFFH): A reputed hatchery for producing carp seeds, located in Jessore. The hatchery was established in 2005.

Mourail Matshya Chashi Samoby Samityn (MMCS): A fish farmers' group of 120 members in Kahaloo, Bogra. The group constitutes small, medium and relatively large aquaculture farmers. MMCS was established in 2007.

Muktagacha Fish-Farmers & Business Association (MFBA): The association was established in 2009 with a commitment to produce high quality table fish for domestic and export markets. MFBA constitutes 300 members and is located in Muktagacha, Mymensing.

Mulia Matshyajibi Samittee (MMS): A local aquaculture association; established in 1973 at Mulia, Narail with landless and marginal fish-farmers group to produce table fish, primarily carp for local and regional markets. Currently the association is working with approximately 600 members with average farm size of 50 decimal.

Nazirertek Fish-dryer's Multipurpose Cooperative-Samity (NFMC): Established in 2003 in Cox's Bazar as an association of dry fish processors. Currently the association constitutes 700 members.

Nokla Motsojibi Samity (NMS): A community-based fish farmers' group in Sherpur. It has 300 fish farms organized into a group. The group was established in 2007. NMS took lease of public owned water bodies of 350 acres spread across three beels (low lying depressions with perennial water bodies that expand during monsoon). These beels are suitable for community-based fish farming.

North-Bengal Thai-Tech Tilapia Hatchery (NBTH): A local fin fish hatchery with nursing facilities. It was established in 2008 at Haf Rasta, Natore Sadar, with a commitment to produce and market quality tilapia fish fries for local markets.

Nowapara Fisheries Complex (NFC): NFC is a carp hatchery and nursing facility. The complex was established in 2008 with commitment to produce quality fish fries and fingerlings for local and regional markets. Total production capacity of the hatchery is 3500 kg of fries.

Pachpir Bazar Matsya Chashi Samoby Samity (PMCS): An association of 120 fish farmers in Kahaloo, Bogra. PMCS was established in 2007. The farmers are scattered within an approximate five km radius centering on Pachpir Bazar.

Phulpur Fish and Prawn Farmers Association (PFPPFA): An association of fish and prawn farmers in Phulpur Upazila of Mymensingh district. The association consists of 600 smallholder aquaculture farmers producing fish and prawn, mostly in household ponds. The farmers sell part of their produce in the local market and the rest is consumed by their families, supplementing basic family nutrition. The association was established in 2003.

Pori Matshya Hatchery (PMH): A local fin fish hatchery with nursing facilities; established in 2000 in Jessore. The goal of PMH is to produce quality fish fries and fingerlings for local markets. The annual production capacity of the hatchery is 5000 kg of fries.

Rakhaing Development Foundation (RDF): RDF was established in 1994 with the mission to liberate the Rakhaing and other disadvantaged people from the poverty trap. The foundation is working with 870 aqua-farmers at present. These farmers are mainly from the ethnic origin and were previously engaged in derelict method of aquaculture.

Rupali Fish Hatchery (RFH): A local fin fish hatchery with nursing facilities; established in 1982 with a commitment to produce quality fish fries and fingerlings for local markets. The annual production capacity of the hatchery is 5500 kg of fries.

Sambridhi Bhomuki Matsya O Gobeshona Kendra (SBMK): A local fin fish hatchery, nursery and research center. SBMK was established in 2003 in Cox's Bazar with a commitment to produce quality fry and fingerling of carp as well as improved farming of carp, other fish and shrimp.

Society for Social Services (SSS): A leading NGO with work areas in 27 districts of Bangladesh. SSS was established in 1986 with head office in Tangail Sadar. The organization works in diverse sectors and has a big micro-credit component. It has mobilized more than 1,100 smallholder aquaculture farmers into groups in Tangail, Chadpur, Comilla, and Noakhali districts and assisted them in farming. All of these members are women.

Society for Sustainable Development for the Rural & Urban Area (SSURD): An NGO established in 1999. It works for the disadvantaged people in neglected areas, especially in North Bengal region which comprises Bogra, Gaibanda, Nagoan, Joypurhat, Rangpur districts. SSURDA promotes local initiatives for economic development of the poor through providing credit and capacity development in agriculture.

South Bay Pvt. Ltd. (SBPL): A Khulna-based carp hatchery with nursing facilities, established in 2008 with a commitment to produce quality fish fries and fingerlings for local markets. The annual production capacity of the hatchery is 3000 kg of fries.

Shuvro Matshya Hatchery (SMH): A local fin fish hatchery with nursery facilities that was established in 1987 with a commitment to produce quality fish fries and fingerlings for local markets. The annual production capacity of the hatchery is 5,000 kg. of fries.

Trinamool Manobik Unnayan Sangstha (TMUS): An NGO, located in Shathia upazila of Pabna district. TMUS is involved in rural livelihoods and entrepreneurship development. The NGO has mobilized an association of smallholder fish farmers in the area. The association constitutes 720 members, 131 of them female.

Trisal Fish Farmers-Beboshi Somiti (TFFS): An association of 160 large aquaculture farmers located in Trishal, Mymensing. The association was established in 2007. TFFS registered the highest biomass production of fish (above 80 ton /ha) under Bangladesh conditions from a unit area in 2009.

Unnayan Songo, Jamalpur (USJ): An NGO established in 1980 with a view to help rural poor . USJ has been working with an estimated 1,000 marginal fish farmers in Jamalpur district in order to enhance their income through increased farm productivity.

Shrimp

Aqua Star Hatchery (ASH): A reputed prawn hatchery located in Rupsha, Khulna; established in 2009.

Bangladesh Shrimp and Fish Foundation (BSFF): A research and advocacy organization, BSFF works with GOB and stakeholders of the shrimp and fish industry for a sustainable growth of the sector. BSFF was established in 2003 and its office is in Dhaka.

Din Bijoy Enterprise (DBE): A shrimp depot, located in Chitolmari, Bagerhat. DBE was established in 2009 and implemented a contract farming initiative involving about 1,000 smallholder shrimp farmers in its year of inception.

Gazi Fish Ltd (GFL): A shrimp farming company using semi-intensive technique. The large commercial farm is located in Dacope, Khulna. GFL was established in 2006.

GHERS (Greater Harvest and Economic Return from Shrimp Project): A PRICE subcontract to World Fish Center (WFC) for the period Oct 2008-Dec 2011. The primary objective of the initiative is to enhance productivity of the shrimp farmers of Khulna region by enhancing their capacity (knowledge, skill) and access to resources and markets.

Jahanabad Sea Foods Ltd. (JSFL): A shrimp and fish processing company that was established in 1995 in Rupsha, Khulna.

Jalalabad Frozen Foods Ltd. (JFFL): A shrimp and fish processing company that was established in 2006 in Rupsha, Khulna.

M. U. Sea Foods Ltd. (MUSF): A shrimp and fish processing company that was established in 1985 in Jessore.

Modina Matshya Prokolpo (MMP): A shrimp depot located in Narail Sadar that was established in 2008. In 2009, MMP organized a contract farming initiative with 100 farmers having 250 acres of farming area.

Mofa Fish Processing Ltd (MFPL): A fish processing company located in Jessore Sadar that was established in 2009.

Mondal Fish Processing Ltd (MF): A shrimp depot located in Dacope Khulna that was established in 2001. In 2009, MF organized 90 shrimp farmers to establish a contract farming system.

North Khulna Poultry and Fish Feed (NKF): A feed (for shrimp, fish and poultry) producing company located in Botiaghata, Khulna and established in 2006.

Organic Sea Foods Ltd. (OSFL), A shrimp and fish processing company that was established in Rupsha, Khulna in 2003.

Raju Enterprise (RE): A shrimp depot, located in Dacope, Khulna that was established in 2001. In 2009, Raju Enterprise organized 300 shrimp farmers having 165 acres to launch a shrimp contract farming venture.

Rupali Sea Foods Ltd. (RSFL): A shrimp and fish processing company established in 1990 in Rupsha, Khulna.

Satata Fish (SF): A shrimp depot located in Dacope, Khulna and established in 2002. In 2009, the depot organized a contract farming initiative with 100 farmers having 115 acres of farming area.

Satkira Feed Ltd. (SFL): A shrimp and fish feed producing company located in Satkhira Sadar that was established in 2009.

Voirab Enterprise (VE): A shrimp depot established in 1991 at Fakirerhat of Bagerhat district. VE organized 350 shrimp farmers with 600 acres of water-body to start contract farming for shrimp in the locality.

LEATHER PRODUCTS SECTOR

Aarong: A social enterprise of BRAC, established in 1978 that works towards BRAC's goal of poverty alleviation through economic and human capacity building and empowerment of Women. Aarong is located at Tejgaon, Dhaka.

Apex Adelchi Footwear Ltd., (AAFL): A large public ltd. company producing and exporting shoes to Europe, Japan, USA, and Canada. AAFL is a member of LFMEAB. The factory is located at Gazipur.

Apex Leather Craft Fashion & Accessories Limited, (ALFAL): A private limited company that was established in 2000. ALFAL is a member of LFMEAB, produces and exports leather products and footwear to Japan, Australia, Canada, France and to some other European countries. Factory is located at Gazipur.

Bangladesh Finished Leather, Leathersgoods and Footwear and Exporters' Association, (BFLLEA): Protects and safeguards the interest of more than 200 members engaged in the manufacturing and export of crust and finished leather and leather goods. The association office is Located at Dhanmondi, Dhaka.

Bangladesh Leather Service Center (BLSC): Located in Hazaribagh, Dhaka, BLSC was established in 2006 under the ITC project financed by the Government of Italy as an entity under the LSBPC. BLSC is expected to become a commercial testing laboratory.

Bangladesh Tanners Association (BTA): An association with more than 100 members; works for the welfare of the tanning entrepreneurs; located at Hazaribagh, Dhaka.

Bay Footwear Ltd.,(BFL): A member of LFMEAB which exports footwear to Japan, France and other European countries. The factory located at Gazipur and BFL was established in 2000.

Bengal Shoes Industries Ltd. (BSIL): A company limited by shares, established in 2007. It is a producer and exporter of footwear to EU, USA, Canada, Japan and other countries). BSIL is a member of LFMEAB. The factory is located at Lakhshipur.

FB Footwear Ltd.: Established in 2005 and a producer and exporter of footwear to Italy, Germany, Austria, USA, Canada, Netherlands, Japan, and France. FB Footwear is a member of LFMEAB. The factory is located at Kaliakoir, Gazipur..

International Labor Organization, TVET program (ILO-TVET): ILO-TVET aims to establish a market-oriented and flexible system which responds to the demand for competitive skills of the modern sector as well as to the needs of youth and under-privileged groups.

International Trade Center (ITC): A joint agency of the World Trade Organization and the United Nations. As the development partner for small business export success, ITC's goal is to help developing and transition countries achieve sustainable human development through exports.

Jennys Shoes Ltd.: Established in 1992, a private limited company which produces footwear and exports to Japan and to some European countries. Jennys is member of LFMEAB. The factory is located at Shympur, Dhaka.

Landmark Footwear Ltd. (LFL): A private limited for-profit company, established in 2000. LFL is a member of LFMEAB and exports footwear to Japan, France, and other European countries. The factory is located at Gazipur.

Leather Goods & Footwear Manufacturing & Exporters' Association of Bangladesh (LFMEAB): An association representing private sector enterprises, producing and exporting leather goods and footwear. It works to create a healthy corporate environment which is conducive to growth of Bangladeshi businesses. It has approximately 50 members. Located at Banani, Dhaka. Established in 2003.

Leaders of Influence Program (LOI) : An Asia Foundation managed initiative involving religious leaders to improve governance, law, and civil society, women's empowerment, economic reform, and development.

Leather Sector Business Promotion Council (LSBPC): Created as a PPP initiative in 2004, the LSBPC is the umbrella organization to act as an interface between industry, institutions and the government. It focuses on promoting the local and international market capacity of the leather sector.

PICARD Bangladesh Ltd.: A joint venture company with PICARD Lederwaren GmbH Co. & KG which produces leather handbags, briefcases and small leather goods for the PICARD brand and also for customers in Australia, Europe, Canada, Japan and Singapore. A LFMEAB member. Factory located at Savar and established in 1995.

SME Foundation (SMEF): An independent center of excellence created and capitalized by the Government of Bangladesh to promote the growth and development of SMEs in all productive sectors of the economy. Located at Panthapath, Dhaka and established in 2007.

ANNEX 4
CASE STUDIES



Market Linkages Open a New Era for Young Entrepreneurs in the Leather Sector

PRICE SMEs are linking to large local retailers- selling their goods to reach a broader market



SMEs showcasing their leather products to a local buyer

“It’s a great achievement for young entrepreneurs like us to be enlisted by Aarong as their regular suppliers. This is a dream come true for all the young entrepreneurs working in the leather sector,” –Md. Habibur Rahman- Managing Director of Sassy

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CHALLENGE

One of the constraints limiting Bangladesh’s SME growth in the leather sector is the lack of exposure to buyers and limited access to markets. In addition, owing to limited information from buyers, manufacturers often find themselves producing goods that are not trendy or appealing to the public, thus limiting demand for their products.

INITIATIVE

PRICE works to improve the competitiveness of the Leather Sector promoting its growth and generating much needed employment. With this in mind, PRICE identifies promising entrepreneurs in the leather industry and assists them through product development workshops, market linkages, and creating access to finance through networking and meeting events.

RESULTS

In an initiative to foster business linkages, PRICE established a dialogue with one of Bangladesh’s most prominent retailers- Aarong, to explore the potential of linking producers to the popular retailer. As Aarong was in the market to identify new subcontractor producers, PRICE organized a networking event with a group of SMEs to meet with the retailers. The linkages workshop was followed by a showcasing of the SMEs’ products at Aarongs’ Tejgaon corporate center on January 11, 2010. PRICE organized and assisted seven SMEs in preparing for the event and provided support to develop a product catalogue for the SMEs to distribute. In addition, PRICE facilitated the sample development process of two SMEs which were selected by Aarong to be its contract suppliers. This is one example of PRICE promoting linkages for SMEs to large, well known firms in Bangladesh and others are soon to follow.



USAID
FROM THE AMERICAN PEOPLE

PRICE

POVERTY REDUCTION BY INCREASING
THE COMPETITIVENESS OF ENTERPRISES

Hobby Turned into Full Time Job

PRICE is working with rural fish farmers in improved fish farming techniques to help generate more income and opportunities.



Photo: PRICE / FARIA SELIM

“PRICE has helped me to increase my fish production by teaching me new fish farming techniques that have provided additional income to my family” -Zakiul

Zakiul Islam is a successful fish farmer who started fishing as a hobby. In 2005 he joined the Muroil Matsha Chashi Samity fish farmers association, and in 2008, he started cultivation of different varieties of fish following traditional methods.

Last year Zakiul was a participant in a PRICE supported training program teaching improved fish farming techniques, pond preparation, purification, density, diseases, proper usage of pesticide, and fish feed preparation. Before the training his investment for one shift was 250,000 Tk, and upon harvesting 5.5 tons of fish he was able to sell it for 325,000 Tk.

Applying his knowledge from the training, this year Zakiul cultivated the same variety of fish, investing 1,400,000Tk in one shift in the same size water body. He sold more than 25 tons of fish for 1,900,000Tk, while using 125 kgs of fish for his family's own consumption, and also distributing the fish among his neighbors. Now the fishing business is Zakiul and his family of six's main source of income. Moreover, he is even able to take on the educational cost of his sister's higher study. “In the future I dream of expanding my business through availing low interest loans from financial institutions with the additional linkage support from PRICE”, says Zakiul.

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Proper Production and Harvesting Techniques Increase Productivity and Generate Profit

Mango farmers and consumers benefit from safe and chemical - free mango production



Photo: PRICE

Chemical-free mangoes at the mango fair

PRICE - supported technical supervision and guidance to Kansat Mango Farmers Multipurpose Cooperative Society Ltd. ensures good yield, quality mangoes and direct marketing from the producers' garden to the consumers.

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The use of hazardous chemicals for ripening immature mangoes has been a crucial problem in Bangladesh. This deteriorates the quality of the fruit and constitutes a threat to human health. At the same time, Bangladesh is not self sufficient in fruit and vegetable production. PRICE is helping to increase the production of fruits and vegetables in a safe and sustainable way.

Through its work with Kansat Mango Farmers Multipurpose Cooperative Society Ltd. (KMFMC SL), a formally registered association, PRICE assisted 251 mango farmers and wholesalers both theoretically and practically in safe and chemical-free mango production, pest management, mature mango harvesting and post harvest handling methods such as grading, sorting, cleaning and packaging to retain highest quality for the benefit of producers and consumers. During the growing season technical supervision and guidance were ensured to achieve good yield and quality by a PRICE hired consultant from the Mango Research Station of Chapainwabganj. Thus association farmers did not require using harmful chemicals for ripening mangoes. PRICE supported the association with marketing expertise and direct linkages to marketing channels, where mangoes can go directly from the producer's garden to the consumer. As such, the KMFMC SL, in collaboration with PRICE and relevant stakeholders, organized a mango fair in several outlets all over Dhaka city.

Md. Suman Ali, a member of KMFMC SL, got PRICE supported trainings on mango harvesting, naturally ripening without chemicals and on marketing. "Many customers come here every day to buy mangoes. They tasted the mangoes at home and came back for another 10 -20 kgs. They started relying on us as the mangoes taste different due to its natural ripening than the ones they get in the city process. Even I am getting 20-40% higher price here", says he, while selling mangoes in an outlet at the Gulshan Society Park. A consumer, an executive member of the Gulshan Society expresses, "I got information from the society that I would get chemical free mangoes here. The mangoes that we buy in the city are mostly chemically ripened. Here I have tasted the mangoes which have the original smell, whereas the ones with chemicals do not. I came back again to buy some more."



Putul Roy: Improving the Family Farm to Increase Income

Training on improved farming techniques create women professionals in shrimp and prawn culture.



Photo: PRICE/USAID

PRICE supported the shrimp and prawn farmers of Bagerhat; training them on improved culture method - Modified Traditional Technology (MTT); helping them combat viral disease outbreak in shrimp and prawn; ensuring their production increased; and, empowering women in the farming business.

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Putul Roy, of Durgapur village, Chilmari, Bagerhat district, is a proud partner in her husband's prawn and shrimp farm. Putul's husband, a school teacher in a Government primary school, had a very limited income to provide for his family of five. Shrimp farming had been a family business for Putul's husband since 1998, but due to his other profession, her husband did not concentrate in the business. In addition, due to lack of proper knowledge in shrimp farming, Putul's husband was facing huge loss in his business.

Putul always had a desire to participate in the family business and help her husband with the prawn and shrimp farm. After several bad harvests due to virus disease outbreaks, low production rates, high stocking density, and traditional culture method, Putul finally expressed her desire to get involved in the business. Her husband encouraged her efforts. Putul became a member of *Padma Mothsya Unnayan Samity* in Durgapur village. At that time PRICE, in collaboration with Renaissance enterprise (depot) of Bagerhat, invited shrimp farmers to attend a meeting through their extension facilitator. In the meeting, *GHERS* activities were discussed and the shrimp farmers were promised training and technical support during the upcoming culture period.

Putul expressed interest in taking the training and joined the group to be trained. The training on improved culture method - Modified Traditional Technology (MTT) taught her about pond preparation, the harmful effect of black soil (peri mati), rotten leaves, weeds, algae, temperature, ph, harmful gases and weeds, natural feed observation methods, methods and benefits of using bleaching powder and lime in shrimp *ghers*, methods and benefits of using molasses, yeast powder and fertilizer for natural feed production, and effect of irregular feeding. Because Putul utilized what she learned in the training, in 2010 she and her husband had a good production and income compared to previous years.

In 2009, before the training, they invested Tk. 49,800 and their income was Tk. 45,650. In 2010, after Putul received the training, their Tk. 43,000 and as of September their income was Tk. 55,000 which is expected increase to Tk. 67,000 by December 2010. In 2009 they produced 103 kgs of shrimp and prawn. Since the training, as of September 2010 they produced 104 kgs of shrimp and prawn and expect that amount to increase to about 214kgs by the end of the year. "The harvesting methods that we had been using for years were not enough to combat the outbreak of viral diseases of the shrimp and prawn. The result was bad harvest in the past years. The knowledge I got from the training on the improved farming method taught me new and effective ways of farming. From a housewife I have turned into a professional shrimp and prawn farmer. I am happy and feel confident as now I can help my husband in his business and contribute to my family income", says Putul with a smile of satisfaction in her face.



Empowering Women through Improved Fish Farming and Management Training

PRICE promotes women entrepreneurs in Pabna district through technical training on improved farming and management in aquaculture



Photo: PRICE / USAID

Women's participation in PRICE-supported organized fish farming initiatives in household ponds has given a different dimension to aquaculture; housewives generating economic activities lead to income generation, improved family nutrition, and women's empowerment

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Traditionally, community fishing has been a way of life in Bangladesh, but aquaculture is replacing open water and community fishing. Fish supplies much needed animal protein to ever growing masses in Bangladesh and there is a huge domestic market for fish and farmed fish. Fishing and fish farming was once considered a male dominated economic activity; however women in the PRICE initiated organized fish farming groups have changed this. Women's participation in organized fish farming in household ponds has given a different dimension to aquaculture; housewives generating economic activities leadsto income generation, improved family nutrition and women's empowerment. Meherun Nessa Ruli is one example of female entrepreneur.

Meherun lives in Kashinathpur, Pabna. She completed her SSC and got married. Before marriage, she was exposed to fish farming through her mother who was engaged in aquaculture in their household pond. After her marriage, Meherun lenared about two family-owned ponds that are under productive. She encouraged her husband to work with her in these ponds to farm fish. They grew fish on their family owned ponds for a year. During this time they learned about how PRICE organizes trainings on improved fish farming in their area and they decided to join. The two attended two training programs on improved farming and management on aquaculture. From the training programs Meherun learned how to raise fingerlings from fries at a household nursery and about improved fish farming using quality grade seeds. Her initiative to integrate these trainings into her family ponds brought success; increased income from fish farming with partial consumption of fish at family level. She is proud that her extra income allows her to support her husband's family and to send her sister-in-law to college.

Meherun and her husband used their new skills to change how they farmed. Previously, they were stocking too many baby fish, disregarding species combination and carrying capacity of the ponds. Now they produce fish following a mixed culture and polyculture. In 2009 they made a profit of BDT 400,000. With their profit they bought a new color TV, wardrobe, both while funding their sister's education. Encouraged by her own performance, Meherun is now planning to lease ponds from neighbors to expand her fish farming business. Her husband and other family members are very supportive of her business initiative and her success has inspired other women in the village to begin fish farming. Meherun is now a group leader for women. She encourages other women to turn all household ponds into a productive aquaculture unit. The initiative has created self-employment and opportunistic employments among rural women alongside income and family nutrition.



Simple Fish Harvesting Techniques Benefits Fish Farmers in Remote Areas

PRICE introduces simple techniques to teach fish harvesting.



Photo: PRICE/ RDF

Through the training, I have learned how to harvest enough fish for my family and for selling at the market.”

-Tan Swe Ming

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Tan Swe Ming is a house wife from an ethnic minority group in Bangladesh of Burmese origin known as Rakhing. She lives in the village of Aga Thakurpara where she was born. The village is remote and accessible only by motor bike during the summer season and by foot during the monsoon season.

Tan Swe Ming inherited two small ponds from her family measuring approximately 40 decimals (0.4 acre or 0.16 ha). The ponds were derelicts for ages, covered with aquatic vegetation, and used to accumulate wild fish during the monsoon season that were of a limited source of protein for the family during the dry season when the fish could be harvested.

In the last quarter of 2008, PRICE signed a partnership agreement with Rakhing Development Foundation (RDF), a local non-profit micro creditor. RDF teamed with PRICE to arrange a series of trainings on improved farming and management. As one of the participants, Tan Swe Ming received trainings that taught her how to clean ponds to retain water year round, prepare the ponds for harvesting, and create fish feed using organic household agriculture waste such as rice bran and kitchen waste.

Since there are no fish hatcheries in Barguna, RDF installed a few nurseries, procured spawns of popular indigenous and exotic carps from hatcheries in Barisal, and raised those to the fry/fingerling stages. Tan Swe Ming and her fellow trainees procured fries from the nurseries and stocked them in their ponds according to the trainings provided by PRICE. In farming she never uses commercial feed in her ponds, instead she uses household agriculture waste to feed the fish.

Within a couple of months, Tan Swe Ming and her family started harvesting fish from their pond for household consumption. When asked about her impression on the success of fish farming, Tan Swe Ming said she is happy that their annual household consumption of fish is now coming from her own ponds, and she has sold over 200kg of excess fish at the village market. Based on the successes and experiences gained in 2009, this year Tan Swe Ming and her husband restocked their ponds with similar species of fish and are expecting a higher return that will generate additional income for the family.



Knowledge in management creates space for improvement in footwear industry

PRICE workforce development initiative increases productivity and generates profit for footwear industries



Photo: PRICE / Michelle Lum

Workers working at Raian Shoes using new technology and machines

“The management training enhanced my skills. I feel content as I could contribute in a more effective way to the product quality and quantity of my company by saving cost and time, both,” –Atiqur Rahman

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CHALLENGE

One of the key constraints of the leather sector in Bangladesh is the acute shortage of skilled workers and managers in the leather industry.

INITIATIVE

To improve the quality and quantity of skilled workforce in the leather industries, PRICE initiated a training program on “Modern Shoe Manufacturing” for the supervisors of seven small and medium shoe making companies in collaboration with Bangladesh Leather Service Center (BLSC). This training was held in October 2009 where two supervisors from Raian shoes participated a three-week program. Raian is one of the major suppliers of the Apex and Bata - leading leather footwear retailer in Bangladesh.

RESULTS

After attending the PRICE facilitated training, the performance of the two management staff was greatly improved. As a result, the top management of Raian shoes gave them increased responsibility to build up the company’s competitiveness. Applying their newly acquired knowledge from the recent training, these two trained staff recommended additional investment in machinery and manpower to increase the industrial productivity. Upon their suggestion, the company invested about Tk. 185,000 to procure machines, including two cutting machines, one heat setting, three trimming, and one folding machine in the first phase. Later, the company invested an additional Tk. 215,000 to procure two sewing machines, three cementing machines, three exhaust fans, one ironing machine, and two thread burning machines. Due to these investments, the production of Raian shoes has increased by about 43% and the daily production of shoes has increased from 350 pairs per day to 500 pairs per day. This generates additional sales of Tk. 7.3 million in one quarter.